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PENGARUH PEMBERIAN EKSTRAK KACANG HIJAU TERHADAP PENINGKATAN KADAR HEMOGLOBIN PADA IBU HAMIL TRIMESTER III TAHUN 2022-2023

The Effect of Administering Mung Bean Extract on Increasing Hemoglobin Levels in Trimester III Pregnant Women Period 2022-2023

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Kata Kunci:
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Abstrak

Pendahuluan: Angka kejadian anemia pada ibu hamil di dunia menurut data WHO (2015) menunjukkan prevalensi sebesar 38,2%, sedangkan angka kejadian anemia pada ibu hamil di Indonesia berdasarkan data Riskesdas tahun 2018 sebesar 48,9%. Jumlah ini meningkat dari tahun sebelumnya yaitu 37,1% pada tahun 2013. Tindakan pencegahan anemia tidak hanya secara farmakologi tetapi dapat menggunakan cara non farmakologi dengan pemberian kacang hijau. zat gizi pada kacang hijau seperti sumber protein, kaya serat, rendah karbohidrat, lemak sehat dan kaya vitamin. **Tujuan**: menganalisis pengaruh pemberian kacang hijau terhadap peningkatan kadar hemoglobin pada ibu hamil trimester III. **Metode:** Rancangan penelitian yang digunakan adalah Pre-Experimental Design dengan bentuk One Group Pretest-Posttest. Pada desain ini, sebelum diberikan perlakuan, sampel terlebih dahulu diberikan pretest (tes awal) dan setelah eksperimen, sampel diberikan posttest (tes akhir). **Hasil:** Menggunakan independent t-test menunjukkan perbedaan peningkatan kadar hemoglobin pada ibu hamil. Nilai p = 0,045 artinya ada perbedaan kadar hemoglobin pada ibu hamil yang rutin minum ekstrak kacang hijau dengan ibu hamil yang tidak rutin minum di wilayah kerja Puskesmas Kabupaten Kemayoran. **Kesimpulan:** Bahwa ada pengaruh pemberian ekstrak kacang hijau dengan tablet Fe terhadap peningkatan kadar Hb pada ibu hamil di Puskesmas Kemayoran.

ABSTRACT

Introduction: The incidence of anemia in pregnant women in the world according to WHO data (2015) shows a prevalence of 38.2%, meanwhile, the incidence of anemia in pregnant women in Indonesia based on the 2018 Riskesdas data is 48.9%. This number increased from the previous year, which was 37.1% in 2013. Actions to prevent anemia are not only pharmacological but can use non-pharmacological methods by administering mung beans. nutritious substances in green beans such as a source of protein, rich in fiber, low in carbohydrates, healthy fats and rich in vitamins. **Objective**: analyzed the effect of green bean on increasing hemoglobin levels in third trimester pregnant weomen.. **Method**: The research design is Pre-Experimental Design with the form of One Group Pretest-Posttest. In this design, before the treatment is given, the sample is first given a pretest (initial test) and after the experiment, the sample is given a posttest (final test).. ***Results:*** Using an independent t-test showed differences in increased hemoglobin levels in pregnant women. The value of p = 0.045 means that there is a difference in hemoglobin levels in pregnant women who regularly drink mung bean extract and pregnant women who drink but not regularly in the working area of the Kemayoran District Health Center. ***Conclusion:*** That there is an effect of mung bean extract with Fe tablets on increasing Hb levels in pregnant women at the Kemayoran District Health Center.

INTRODUCTION

According to the World Health Organization (WHO), the Maternal Mortality Rate (MMR) in 2017 reached 295 per 100,000 live births. Based on data from the Indonesian Demographic and Health Survey (SDKI) in Indonesia, the 2017 Maternal Mortality Rate (AKI) was 305/100,000 live births, while the Maternal Mortality Rate (AKI) in West Java in 2017 was still quite high 479 out of a total of 868,555 live births (0 .06%) (Maula, 2017). In developing countries, anemia is a major contributing factor to maternal morbidity and mortality during pregnancy. Anemia is a condition in which the hemoglobin (Hb) level of a pregnant woman is less than 11gr/dl according to WHO standards. This means that a pregnant woman should not have Hb below 11gr/dl. Most pregnant women experience iron deficiency anemia and acute bleeding, and it is not uncommon for the two to interact. Iron is an important element in the formation of red blood cells and increases the body's resistance and immunity of the fetus (Irawan, Studies and Relationships, 2021).

The incidence of anemia in pregnant women in the world according to WHO data (2015) shows a prevalence of 38.2% and the Southeast Asia region is the area with the highest incidence of anemia in pregnant women, which is equal to 48.7%, meanwhile, the incidence of anemia in pregnant women in Indonesia is based on the 2018 Riskesdas data. is 48.9%. This number increased from the previous year, namely 37.1% in 2013 (Riskesdas 2018). Iron deficiency anemia is the most common form of anemia, about 50% of pregnant women do not have enough iron in their bodies. The Indonesian government has taken steps to address the problem of anemia, but the prevalence of anemia is still quite high.

Measures to prevent anemia not only by means of pharmacology but can use non-pharmacology by giving green beans. Where green beans are an economical food source, easy to get in the form of food and drinks. Mung beans are very beneficial for the health of pregnant and lactating women, as well as for supporting the growth of children because of the nutritious substances contained in green beans such as a source of protein, rich in fiber, low in carbohydrates, healthy fats and rich in vitamins. Measures to prevent anemia in pregnant women can be through consumption containing iron from animal ingredients and vegetable ingredients such as beans, tempeh, iron tablets, counseling and anemia screening (Mas'amah and Utami, 2022). The results showed that the average HB level before and after being given fe and mung bean extract in the intervention group was 10.7gr%/dl (mild anemia category) and in the control group it was 10.1 gr%/dl (mild category). The test results for the average level of HB levels before and after being given mung bean extract in the intervention group obtained a p-value = (0.011 <0.05) and the control group also obtained a p-value = (0.011 <0.05) so that there was an effect of giving fe tablets and mung bean extract on HB levels in third-trimester pregnant women in the working area of the Kotabumi II Community Health Center, North Lampung Regency, in 2021 (Choirussa and Manurung, 2020).

METHODS

The research design is a Pre-Experimental Design with the form of One Group Pretest-Posttest (Safar and Rizka, 2022). In this design before the treatment is given, the sample is first given a pretest (initial test) and after the experiment the sample is given a posttest (final test). This design is used in accordance with the objectives to be achieved, namely wanting to know the effectiveness of consuming mung bean extract in third trimester pregnant women (Novianti et al., 2018). The pretest and posttest were carried out using a control group design approach. The population in this study were all third trimester pregnant women at the

Kemayoran District Health Center sampling using a consecutive sampling approach. Data collection technique is a method or method used to collect primary data and secondary data.

RESULTS

This research was conducted in the Kemayoran sub-district in the working area of the Kemayoran sub-district health center. This research was carried out starting from November 17 2022, data collection was carried out by collecting secondary data and primary data taken about pregnant women who experience Trimester 3 Anemia (Yana, Musafaah and Yulidasari, 2016). The number of sample data used is 20 people. The data that has been collected is then processed using the Computer Program Statistics and Service Solution (SPSS). The results of data processing are then presented in tabular form accompanied by an explanation.

Table 1. Differences in Hemoglobin Levels Before Administering 250 Ml Ml Instant Mung Bean Extract and After Administering 250 Ml Ml Mung Bean Extract In the Kemayoran District Public Health Center

Variable	N	x ± SD (gr/dl)	t	p
Prior Hemoglobin Level	20	9.00 ± 0.90	8.833	0.000
Hemoglobin Level After	20	10 ± 1.80		

Based on table 5.1, it can be seen that the results of the paired test for hemoglobin levels before and after giving 250 ml of instant mung bean extract obtained a value of p = 0.000 so that there was a difference in hemoglobin levels before and after giving 250 ml of mung bean extract. This was reinforced by the results of the average difference in hemoglobin levels before and after administration of 250 ml of instant mung bean extract which showed an increase of 1.00 ± 1.10 gr/dl.

Table 2. Differences in Hemoglobin Levels of Pregnant Women Consuming 250 Ml Instant Mung Bean Extract at the Kemayoran District Health Center

Variable	N	Mean Kadar HB	t	Value
Drink regularly every day	15	11.22		
Irregular drinking	5	10.82	2.158	0.045

From table 5.2 using the independent t-test shows differences in increased hemoglobin levels in pregnant women. The value of p = 0.045 means that there is a difference in the difference in hemoglobin levels in pregnant women who regularly drink mung bean extract and pregnant women who drink but not regularly in the working area of the Kemayoran District Health Center. So it can be concluded that there is an effect of mung bean extract with Fe tablets on increasing Hb levels in pregnant women at the Kemayoran District Health Center.

DISCUSSION

Based on table 5.1, it can be seen that the results of the paired t-test for hemoglobin levels before and after administration of mung bean extract in the 250 ml dose group obtained p = 0.000 so that there was a difference in hemoglobin levels before and after administration of mung bean extract in the 250 ml dose group. This was reinforced by the results of the difference in average hemoglobin levels before and after administration of mung

bean extract in the 250 ml dose group which showed an increase of 1.00 ± 1.10 gr/dl. The increase in hemoglobin levels in the 250 cc dose group was a significant increase statistically and clinically. The value of hemoglobin levels is clinically significant when there is an increase of at least 1 gr/dl {Wintrobe (2000) in Heltty, et al (2008).

Based on table 5.2, it can be seen that the results of the independent t-test can be seen that the difference in the difference in hemoglobin levels in the two groups with a p value = 0.045 means that there is a difference in the difference in hemoglobin levels in pregnant women who regularly drink 250 ml of instant green bean extract every day and pregnant women who drink but not regularly. The difference in hemoglobin levels is 0.4 gr/dl.

An increase in hemoglobin levels occurs due to the nutrient content contained in mung bean extract and can also be influenced by nutrient intake (Safrida Sitompul, 2021). Low hemoglobin levels in the sample can be caused by inadequate food intake, lots of physical activity, stress, lack of knowledge about anemia, and wrong eating habits, for example when at home or work the sample consumes iced tea and coffee more often than drinks. water and rarely consume fruit. Most of the samples in this study were restless or sleep deprived, this was because pregnant women worked overtime doing office work and anatomical and physiological changes that occurred during pregnancy. Anemia in pregnant women can occur due to several factors such as blood thinners and increased blood volume during pregnancy, decreased red blood cell production, excessive destruction of red blood cells. In addition, anemia can also be caused by low knowledge about anemia, socio-economics, food intake (Proverawati and Rahmawati, 2012). Anemia in pregnant women can have an impact on the first trimester, anemia can cause missed abortion, congenital abnormalities, abortion / miscarriage. In the second trimester, anemia can cause premature parturition, ante partum bleeding, impaired fetal growth in the uterus, intrapartum asphyxia to death, gestosis and susceptibility to infection, and cardiac decompensation to maternal death. At the time of delivery anemia can cause primary and secondary histological disorders, the fetus is born with anemia, labor with high steps because the mother gets tired quickly and interruption of the course of labor requires operative action.

One way to overcome anemia with food fortification. Fortification of widely consumed and centrally processed foods is at the core of anemia control in many countries. Food fortification is one of the most effective ways to prevent iron deficiency (Arisman M. 2017). One of the foods that can prevent iron deficiency is green beans. Green beans are a food ingredient that contains substances needed for the formation of blood cells so that they can overcome the effect of decreasing Hb. Green beans 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 also contain vitamins and minerals. Minerals such as calcium, phosphorus, iron, sodium and potassium are abundant in green beans (Astawan, 2019).

Green beans contain vitamins and minerals needed by the body (Astawan, 2009). One of the minerals contained in green beans is iron. The iron content contained in green beans is 6.7 mg/100 g. The element iron which is classified as a micro mineral is the main component of the synthesis of hemoglobin. Green beans can be used as an additional intake of iron in increasing blood hemoglobin levels (Rositawaty, 2009). Green beans contain 6.7 mg of iron per 100 grams of green beans. Absorption of iron is rate limiting, which means that if the absorption of iron is sufficient in the body, the body will reduce its own absorption of iron. Iron is

transported by the blood to the bone marrow to form red blood cells where iron is part of the protein hemoglobin which carries oxygen to the blood. Iron deficiency can cause anemia.

Green beans contain substances needed for the formation of blood cells so that they can overcome the effect of decreasing hemoglobin. The amount of iron content in green beans is 6.7 mg per 100 grams of green beans. Vitamin C in green beans can increase the absorption of non-heme iron up to four times. Vitamin C with iron has a complex iron ascorbate compound that is soluble and easily absorbed. The role of vitamin C in the process of absorption of iron is by reducing ferric iron (Fe3+) to ferrous (Fe2+) in the small intestine so that it is easily absorbed. %. Vitamin C inhibits the formation of hemosiderin which is difficult to mobilize to liberate iron when needed. The amino acid content in green beans is quite complete consisting of essential amino acids namely isoleucine, leucine, lysine, methionine, phenylalanine, threonine, valine, and also nonessential amino acids namely alanine, arginine, aspartic acid, glutamic acid, glycine, tryptophan and tyrosine . Previous research conducted by Heltty 2018, proved that mung beans are effective in treating anemia, because consumption of 2 cups of mung beans can fulfill 50% of the daily iron requirement and 80% meet the daily requirement of vitamin C and other vitamins such as thiamine, riboflavin and niacin (Heltty, 2018).

This research is in line with Misrawati's research on the effect of green bean extract and Fe tablets on increasing Hb levels in anemic pregnant women at the Bara Baraya Health Center in Makassar in 2018. The results of this study obtained the value of data analysis using the Wilcoxon test and the Mann Whitney test, there is an effect of peanut extract green and fe tablets on increasing Hb levels in anemic pregnant women where the value of $\rho = 0.00 < \alpha = 0.05$ and the sig value or value of $.002 < \alpha = 0.05$ which means Ho is rejected and Ha is accepted.

CONCLUSION

In this study, the effect of giving mung bean extract on increasing hemoglobin levels in trimester 3 pregnant women was analyzed. The conclusions in this study were as follows: There was a significant difference between HB levels before giving mung bean extract and after giving mung bean extract with P value = 0.000. There is a significant difference between the frequency of pregnant women who consume regularly every day and pregnant women who drink but not regularly with p value = 0.04

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