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THE INFLUENCE OF GIVING GREEN BEAN EXTRACT AND BEAN EXTRACT SOYBEAN ON INCREASING HEMOGLOBIN LEVELS IN TRIMESTER III PREGNANT WOMEN

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ABSTRACT

Anemia is a health problem throughout the world, especially in developing countries. Iron deficiency problems often cause anemia in pregnant women because iron is needed to help the body produce new red blood cells rich in oxygen and nutrients; the impact of anemia on pregnant women is not insignificant. Mainly, pregnant women who experience anemia in pregnancy will affect the period of pregnancy, labor, and childbirth, namely miscarriage, bleeding, premature parturition, uterine inertia, prolonged delivery, uterine atony, shock, stillbirth, in the puerperium, and can even have an impact on death. Aim the study to measure the increase in hemoglobin levels in third-trimester pregnant women from the effect of green bean and soybean extracts.

This research is a quasi-experimental research with a two-group pre-test - post-test approach. The population of this study was the third-trimester pregnant women who had their pregnancies checked at the Putri Ayu Public Health Centre. The sampling technique for this study was simple random sampling, and the sample size was 20 respondents who met the inclusion criteria. The sample used in this study is simple random sampling. Following the research hypothesis described, the statistical analysis technique used is univariate with frequency distribution and bivariate with the Wilcoxon test. Research analysis was carried out with the help of a computerized program. Based on the study's Wilcoxon test results, the green bean group value was $\rho = 0.003$ (CI 95%), while in the soybean group, it was $\rho = 0.011$. This means that mung bean extract is more influential in increasing haemoglobin levels in third-trimester pregnant women than soybean extract.

Keywords: anemia; hemoglobin levels; mung bean extract; soybean extract

BACKGROUND

World Health Organization (2011) 2011, the prevalence rate of anemia for pregnant women aged 15-49 years in the world was 83.2%. According to the results of Basic Health Research in Indonesia, in 2018, there was an increase of 48.9% of pregnant women who experienced anemia, while in 2013, anemia in pregnant women in Indonesia amounted to 37.1%. (Central Bureau of Statistics, 2022). Furthermore, the anemia rate in the Putri Ayu Health Center working area in 2019 was 223 pregnant women who experienced anemia, while in 2020, pregnant women who experienced anemia 17% (Jambi City Health Office, 2021).

Iron deficiency problems often cause anemia in the mother's pregnancy because iron is needed to help the body produce new red blood cells rich in oxygen and nutrients. Efforts to prevent anemia during pregnancy

can be made by the mother pregnant by increasing iron intake through food, consuming adequate amounts of protein, and reducing consumption of foods that can inhibit iron absorption, such as phytate (soybean, corn, chocolate, milk, and nuts), phosphate (milk, cheese), tannins. Iron supplements given at least 90 tablets to sufficient iron for mothers during pregnancy are very important to focus on (Triharini, 2019).

According to research conducted by Choirunissa and Manurung (2020), the results showed an effect before and after the administration of green bean juice and honey on hemoglobin levels in pregnant women. Meanwhile, according to research conducted by Valentina, Yusran, and Meliahsari (2020), The study, which was conducted for seven days, found that there was an effect of giving soy milk on increasing hemoglobin (HB) levels in anemic pregnant women in the working area of the Putri Ayu Health Center in 2020. Therefore, the study aims to measure the increase in hemoglobin levels in third-trimester pregnant women from the effect of green bean and soybean extracts.

RESEARCH METHODS

This type of research is a quasi-experimental approach, namely two group pre-test - post-test. The population of this study was third-trimester pregnant women who had their pregnancies checked at the Putri Ayu Public Health Center.

The sampling technique for this study was simple random sampling, and the sample size was 20 respondents who met the inclusion criteria. Therefore, the sample used in this study is simple random sampling. Inclusion criteria in the survey are pregnant women without complications, who and not take multivitamins containing iron, who have low hemoglobin levels (≥9), and who are willing to be respondents. Data collection was carried out in March – June 2022.

RESULTS AND DISCUSSION

Table 1. Frequency Distribution of the Effect of Hemoglobin Levels Before Given Mung Bean Extract on Increased Hemoglobin Levels in Third Trimester Pregnant Women in the Working Area of Putri Ayu Health Center, Jambi City in 2022

Variable	Frequency (n)	Average (gr/dl)	Min-Max (gr/dl)
Hb levels before being given green beans	10	10.50	9 -10

Table 2 Frequency Distribution of the Effect of Hemoglobin Levels After Giving Mung Bean Extract on Increased Hemoglobin Levels in Third Trimester Pregnant Women in the Working Area of Putri Ayu Health Center, Jambi City, 2022

Variable	Frequency (n)	Average (gr/dl)	Min-Max (gr/dl)
Hb levels after being given green beans	10	11.70	11–12

Table 3. Frequency Distribution of the Effect of Hemoglobin Levels Before Giving Soybean Extract on Increased Hemoglobin Levels in Third Trimester Pregnant Women in the Working Area of Putri Ayu Health Center, Jambi City, 2022

Variable	Frequency (n)	Average (gr/dl)	Min-Max (gr/dl)
Hb Levels Before Giving Soybeans	10	10,40	8– 12

Table 4. Frequency Distribution of the Influence of Hemoglobin Levels After Giving Soybean Extract to Increased Hemoglobin Levels of Third Trimester Pregnant Women in the Work Area of the PutriAyu Health Center, Jambi City, 2022

Variable	Frequency (n)	Average (gr/dl)	Min-Max (gr/dl)

Hb Levels After Giving Soybeans	10	11.20	8-12	

Table 5. Frequency Distribution of the Effect of Mung Bean Extract on Increasing Hemoglobin Levels in Third Trimester Pregnant Women in the Work Area of Putri Ayu Public Health Center, Jambi City in 2022

Variable	Frequency (n)	Median	Min – Max	ρ value
Before Giving Green Beans Juice	10	11	9 – 10	0.003
After Giving Green Beans Juice	10	12	11 – 12	

Table 6. Frequency Distribution of the Effect of Giving Soybean Extract on Increased Hemoglobin Levels in Third Trimester Pregnant Women in the Work Area of PutriAyu Public Health Center, Jambi City, Years 2022.

Variable	Frequency (n)	Median	Min – Max	P value
Before Giving Soybean Juice	10	11.20	8 – 12	0.011
After Giving Soybean Juice	10	11.50	9 – 12	

Table 7. Average Differences in Hemoglobin Levels After Giving Mung Bean Extract and Soybean Extract to Third Trimester Pregnant Women in the Working Area of the Putri Ayu Health Center, Jambi City, 2022.

Variable	Frequency (n)	Median	Min – Max	P value
After Giving Peanut Juice Green	10	12	11 – 12	0.003
After Giving Soybean Juice	10	11.50	9 – 12	0.011

The diagram shows the average change in Hemoglobin levels of third-trimester pregnant women in the Putri Ayu Public Health Center, Jambi City, working area in 2022. It was found that all ten respondents had an increase in the soya bean extract group. In comparison, of the ten respondents, seven experienced a boost, three did not experience an increase, and no respondents decreased. Therefore, from the comparison of the Wilcoxon test, it can be concluded that mung bean extract is statistically proven to increase the HB of pregnant women, while soybean extract is not statistically proven to affect the increase in HB in pregnant women. However, in the soybean extract group, there is still an increase in HB, as seen from the average of 11.20 gr/dl, which experienced a rise of 7 (70%) of 10 respondents.

Based on table 5, the Wilcoxon test obtained $\rho = 0.003$ ($\rho < 0.05$), then statistically, there is a significant difference between before and after being given mung bean extract to third-trimester pregnant women in the working area of the Putri Ayu Public Health Center, Jambi City in 2022.
This means HI is acceptable, namely the effect of giving mung bean extract on increasing hemoglobin levels in third-trimester pregnant women. Green beans contain as much as 7.5 mg of iron in every 100 grams. Green beans also contain vitamin C, which helps absorb Fe in the body because it can change the ferric and ferrous forms (Pawera et al, 2019).
This is in line with the results of the research conducted Choirunissa and Manurung (2020). The results showed that there was an effect before and after the administration of green bean juice and honey on hemoglobin levels in pregnant women who were given 250 ml of green bean juice for seven consecutive days at a dose of 100 grams of green beans.

Based on table 6, the Wilcoxon test obtained ρ = 0.011 (ρ < 0.05), then statistically, there is a significant difference between before and after being given soya bean extract to third-trimester pregnant women in the working area of the PutriAyu Public Health Center, Jambi City in 2022. This means that H2 is unacceptable, namely that there is no effect of giving soybean extract on the increase in hemoglobin levels in third-trimester pregnant women in the working area of the Putri Ayu Public Health Center, Jambi City, in 2022.

This is not in line with the results of research by Valentina, Yusran, and Meliahsari (2020) study conducted for seven days, which found that there was an effect of giving soy milk on increasing hemoglobin (Hb) levels in anemic pregnant women in a work area of the Kendari City Health Center in 2020.

The advantage of this research is that it directly provides door-to-door intervention and guidance to respondents to get maximum results. Researchers conducted 2-14 meeting days to offer interventions and check H levels before and after giving the intervention.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the research and the description of the discussion regarding the effect of giving mung bean extract and soybean extract on increase hemoglobin levels in pregnant women in the last trimester in the work environment.

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