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Research Article

The Influence of Green Beans and Fe Tablets to Increasing Hb Levels of Pregnant Women in Cilamaya Wetan Health Center in 2022

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Abstract

Aims: To determine the effect of giving Fe tablets and mung bean juice on increasing Hb levels of pregnant women at the Cilamaya Wetan Public Health Center, Cilamaya Wetan Village in 2022.

Methods: This study used a quasi-experimental research design with a pre-test and post-test approach, with divided into 2 groups, with the sampling method in this study using the quota sampling technique, namely the entire population was sampled, all of them were as many as 48 people. The data collection tool is using a questionnaire. The data collection technique used the square test with the help of SPSS version 28.

Results: Obtained from 48 respondents who were divided into two groups where after being given fe tablets there was an increase in Hb, as well as respondents who were given mung bean juice had an increase in Hb levels. Where the results of the T-test (paired sample test) obtained a p-value of <.001.

Conclusion: From the results of the study, it was found that there was an effect of giving Fe tablets and mung bean juice on the increase in Hb levels in pregnant women in the Cilamaya Wetan Public Health Center in 2022.

Keywords:

Anemia, Hb, Fe tablets, mung bean juice

INTRODUCTION

One of the factors for the high maternal mortality rate is the presence of high-risk pregnancies, namely, pregnancies accompanied by diseases or conditions that can hurt the mother or fetus. The diseases that are included in high-risk pregnancies include anemia, hypertension, heart disease, and diabetes (1). The high incidence and negative effects of anemia on maternal and infant health keep it as a major issue in public health. Anemia is extremely common, and it affects people of all ages in the area. Pregnant women are one population with a disproportionately high rate of anemia (2). According to WHO data, an estimated 48.2% of pregnant women in Asia, 57.1% in Africa, 24.1% in the Americas, and 25.2% in Europe suffer from anemia. In underdeveloped

nations, the prevalence of anemia ranges from 33 percent to 75 percent (3). According to Risdas West Java 2018, 48.9% of pregnant women in Indonesia suffer from anemia. Women between the ages of 15 and 24 accounted for as much as 84.6% of all cases of anemia in pregnant women. To combat the risk of anemia, all pregnant women are recommended to take a blood-supplementing tablet (TTD) regimen of at least 90 tablets.

The coverage of Fe 1 and Fe 3 from 2014 to 2016 has increased, but activities such as health education and promotion to pregnant women still need to be improved. While in the Cilamaya Wetan Health Center area itself, in 2021 222 people experienced anemia (Cilamaya Wetan Health Center, 2022).

One of the nutritional problems of the community is iron nutritional anemia, which is a condition when the hemoglobin (Hb) level in the blood is low. The low level of Hb occurs due to a lack of intake of nutrients needed for the formation of components of Hb, especially iron (Fe). Most of the anemia found in Indonesia is iron nutritional anemia, which is anemia caused by iron (Fe) deficiency apart from giving mung bean extract which is very effective also for increasing Hb.

The performance of maternal health programs may be measured primarily by the Maternal Mortality Rate (MMR), so it is important that all pregnant women receive a blood-supplementing tablet (TTD) of at least 90 tablets throughout pregnancy and drink mung bean juice. For the purposes of this indicator, maternal mortality includes only those deaths that occur during pregnancy, childbirth, and the puerperium that are directly attributable to these conditions or their management, and not those that occur as a result of external factors like accidents or incidents. According to the 2019

Indonesian Health Profile, the Maternal Mortality Rate (MMR) is the number of deaths experienced by mothers for every 100,000 births (4).

METHODS

In this study, a quasi-experimental research design with a pre-test and post-test strategy was employed. Participants were randomly assigned to one of two groups, and each group underwent a pre-test before receiving the experiment and a post-test afterwards. According to (5), a study's population is the geographical region comprising the items or subjects with the desired characteristics. In this study, 48 persons were randomly selected from the entire population using a quota sampling procedure. There were a total of 48 participants in this trial, divided evenly into two groups: those who received Fe tablets and those who received mung bean juice. The data collection method employed by the instrument is a chi-square test or a chi-square test aided by SPSS version 28.

RESULTS

1. Univariate analysis

a. Hb Levels Before Consumption of Fe Tablet Tablets

Table 1.
Frequency Distribution of Hb Levels Before Consumption Fe tablets at Puskesmas Cilamaya Wetan Cilamaya Wetan Village in 2022

Before Consuming Fe Tablet Tablets	Frequency	Percentage
10,5	9	37.5
10	15	62.5
Total	24	100,0

Based on the table above, from 24 respondents there were 9 (37.5%) people with a Hb level of 10.5 mg/dl, and 15 other people before consuming Fe tablets had a Hb value of 10 mg/dl with a percentage value of 62.5%.

b. Hb Levels After Consumption of Fe Tablets

Table 2.
Frequency Distribution of Hb levels Consumption Fe Tablets at Puskesmas Cilamaya Wetan Cilamaya Wetan Village in 2022

After taking Fe tablets	Frequency	Percentage
12,4	15	62.5
13	9	37.5
Total	24	100,0

Based on the table above, after the respondents took Fe tablets, the Hb value increased, 15 people increased to 12.4 mg/dl (62.5%), and 9 people increased to 13 mg/dl (37.5%).

c. Tingkat Kadar Hb Sebelum Konsumsi Sari Kacang Hijau

Table 3.
Hb Frequency Distribution Before Consumption Green Bean Extract at Cilamaya Health Center Wetan Cilamaya Village Wetan 2022

Before Consuming Green Bean Extract	Frequency	Percentage
10,5	18	75.0
10,4	6	25.0
Total	24	100,0

From the table above, there were 24 respondents before consuming mung bean juice, 18 people had a Hb value of 10.5 mg/dl (75.0%), and 6 people had a Hb value of 10.4 (25.0%).

d. Hb Levels After Consumption of Green Bean Extract

Table 4.
Frequency distribution of Hb levels after consumption of Green Bean Extract at Cilamaya Wetan Health Center Cilamaya Wetan Village in 2022

After Consuming Green Bean Juice	Frequency	Percentage
11,9	18	70.8
12	6	29.2
Total	24	100,0

Based on the table above, there were 18 respondents after consuming mung bean juice had a Hb of 11.9 mg/dl (70.8%), and the other 6 respondents had a Hb of 12 mg/dl (29.2%).

e. Level of Compliance in Consuming Fe. Tablets

Table 5.
Frequency Distribution of Respondents According to Compliance in Consuming Fe Tablets at Cilamaya Wetan Health Center, Cilamaya Wetan Village The the the the the year 2022

Compliance with taking Fe tablets	Frequency	Percentage
obey	13	54.2
not obey	11	45.8
Total	24	100,0

Based on the table above, 24 respondents have a level of compliance in consuming Fe tablets, namely, 13 people comply with a percentage value of 54.2%, and 11 others do not comply with a percentage value of 45.8%.

f. Compliance Level in Consuming Green Bean Extract

Table 6.
Frequency Distribution of Respondents According to Compliance in Consuming Green Bean Extract at the Cilamaya Wetan Village Health Center Cilamaya Wetan 2022

Compliance with Consuming Green Bean Extract	Frequency Percentage	
	y	e
Obeiy	12	50.0
Not obey	12	50.0
Total	24	100.0

Based on the table above, 24 respondents have a level of compliance in consuming mung bean juice, namely, 12 people are obedient with a proportion of 50.0%, and 12 other people are not compliant with a proportion of 50.0%.

2. Bivariate Analysis

- a. Significance Test Results Paired Sample T-Test Before and After Consumption of Fe and Green Bean Extract Tablets

Table 7.
Significance Test Results Paired Sample T-Test Before and After Consumption of Tablets Fe and Green Bean Extract

Statistic test	df	Sig (2-tailed)
Hb before consumption of Fe-Hb after Consumption of Fe	23	< ,001
Hb before consuming green bean juice - Hb after consuming green bean juice	23	< ,001

From table 7 above, it is found that the significance value (p) is 0.001 which means that there is an effect of giving Fe tablets and mung bean juice on the increase in Hb levels in pregnant women.

DISCUSSION

Based on the results of the bivariate analysis, 48 respondents were divided into 2, namely 24 respondents in each group. Where there are 9 (37.5%) people with an Hb level of 10.5 mg/dl, increasing to 13 mg/dl (37.5%). The other 15 people before consuming Fe tablets had a Hb value of 10 mg/dl with a percentage value of 62.5%. After consuming the tablets, Fe increased to 12.4 mg/dl (62.5%).

While the other 24 respondents before consuming mung bean juice and 18 people had a Hb value of 10.5 mg/dl (75.0%), 6 people had a Hb value of 10.4 (25.0%). After consuming mung bean extract, the Hb value increased from 18 respondents after consuming mung bean extract having a Hb of 11.9 mg/dl (70.8%), and 6 other respondents had a Hb of 12 mg/dl (29.2%).

According to Tarwoto (2016), Hb examination and monitoring can be carried out using the Sahli method, at least twice during pregnancy, namely in the first trimester and third trimester. The results of the Hb examination with Sahli can be classified as follows, Hb 11 g%: not anemic, Hb 9-10 g%: mild anemia, Hb 7-8 g%: moderate anemia, Hb <7 g%: severe anemia.

Premature birth, maternal and infant mortality, and infectious illnesses are all linked to anemia in pregnant women, according to the Indonesian health profile for 2020. Fetal/infant growth and development can be impeded by the mother's iron deficiency anemia both during pregnancy and after birth.

A. Effect of Fe tablets on the increase in Hb

Based on the results of the univariate analysis seen from the frequency distribution table of the level of pregnant women's adherence to Fe tablets, 24 respondents have a level of compliance in consuming Fe tablets, namely, 13 people are obedient to consuming Fe tablets with a percentage value of 54.2%, 11 others are not compliant. with a percentage value of 45.8%.

Based on the results of the paired T-Test, from the pre and post-test results, a significant P-value lower than 0.05 means, H_a is accepted. Based on the results of the study, a significant value of $P < 0.001$ was obtained, which means that there was an increase in the Hb level of pregnant women after consuming Fe tablets.

This study is in line with the research conducted by Rini Hariani Ratih under the title "The Effect of Giving Iron (Fe) Tablets on Increased Hemoglobin Levels in Anemic Pregnant Women" with the results of the study on average hemoglobin levels in anemic pregnant women before giving iron tablets. (Fe) was 8.81 ± 0.94 while after administration of iron tablets (Fe) the average hemoglobin level of anemic pregnant women was 12.58 ± 0.83 , with a p-value of 0.001 the value was $< (0.05)$.

This is in line with the theory according to (6), that iron tablet supplements are associated with a decrease in the prevalence of anemia, anemia conditions, and improvement in anemia in pregnancy with small and long doses of

supplementation being more effective than short-term administration.

According to the researcher's assumption, regular consumption of Fe tablets is associated with the incidence of anemia in pregnant women. Malnutrition in pregnant women has a large enough impact on the growth process of the fetus and child born (7). The results showed that from 24 respondents 9 respondents had a Hb of 10 mg/dl before consuming Fe tablets (37.5%), and 15 respondents before consuming Fe tablets had a Hb of 10 mg/dl (62.5%). After consuming Fe tablets, 24 respondents experienced an increase in their Hb value where 15 respondents increased to 12.4 mg/dl, and 9 rns of other respondents increased to 13 mg/dl. Anemia can still afflict pregnant women who take Fe tablets, as iron can be gained in other ways, such as by eating foods that naturally contain a lot of iron. After statistical tests were carried out, there was a significant relationship between the regularity of consuming Fe tablets with the occurrence of anemia in pregnancy in the research that the authors conducted at the Cilamaya Wetan Health Center, Cilamaya Wetan Village in 2022.

Pregnant women need to consume talc Fe during pregnancy because the mother's iron needs increase during pregnancy. Every mother is recommended to consume Fe tablets regularly at least 90 tablets during pregnancy. Because pregnant women tend to experience a decrease in iron, because it is shared with the fetus, it is therefore recommended to take Fe tablets during pregnancy. Even though the mother regularly consumes Fe tablets, it does not guarantee that the mother will not get anemia during her pregnancy. Mothers should consume foods that contain iron regularly and get enough rest according to the trimester of pregnancy. Iron (Fe) is only one of the efforts of health workers to prevent anemia in pregnancy.

B. Effect of green bean juice on the increase in Hb

According to the frequency distribution data, half of the respondents (12) adhered to the recommendation to drink mung bean juice at a rate of 50.0%, while the other half (12) did not adhere to the recommendation. Based on the results of the paired T-Test test from the pre and post-test results, a significant P-value lower than 0.05 means H_a is accepted. Based on the results of the study, a significant value of $P < 0.001$ means that there is an increase in Hb levels of pregnant women after consuming mung bean juice.

According to the results of the Paired T-test statistical test, the significance value of the p-value is 0.021 ($p < 0.05$), indicating that there is an increase in Hb levels in pregnant women in the first and second trimesters after consuming mung bean juice. This study is consistent with that conducted by (8) with the title "Increasing Hb Levels of Pregnant Women with Dates Juice and Green Bean Extract in Pekalongan City." As expected, this conforms to the hypothesis. (9) reports that among legumes, green beans have a particularly high iron content—7 milligrams per 100 grams. The embryo and seed coat of green beans contain the highest concentrations of iron. Green beans' phytochemical content, which aids the hematopoiesis process, and other ingredients like calcium, phosphorus, iron, sodium, and potassium are beneficial for pregnant women in the formation of red blood cells and in preventing anemia. Green beans are one type of legume that has a high iron content, which is equal to 7 mg. The most iron content in green beans is found in the embryo and seed coat (10).

CONCLUSION

Based on the findings and discussion of the study "The Effect of Giving Fe Tablets and Green Bean Extract on Increasing Hb Levels of Pregnant Women at the Cilamaya Wetan

Health Center in 2022." According to the findings of the paired T-Test assisted by SPSS version 28, there was an effect of supplying Fe tablets and mung bean juice to increase Hb levels, with a p-value of 0.001. Further research is required to find out other characteristics that are suspected to be factors connected to anemia in pregnant women with a larger number of samples so that they are more representative.

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