The Effectiveness Of Mung Beans And Katuk Leaves On Increasing Hemoglobin Levels In Maternity At TPMB Rennie Yuwitasari In 2022

Rennie Yuwitasari[1]*, Nursitiyaroh[2], Budi Ermanto[3]

[1,2]Abdi Nusantara College of Health Sciences, Indonesia
*Corresponding Author:
Email: rennie.syah@gmail.com

Abstract.
Background : An iron-rich protein called hemoglobin has an affinity for oxygen, which causes it to produce oxyhemoglobin in red blood cells. O2 (oxygen) will be transported from the lungs to the body's tissues as a result of this function. Purpose of Writing: to determine the Effectiveness of Mung Beans and Katuk Leaves on Increased Hemoglobin Levels in Mothers Giving Birth at TPMB Rennie Yuwitasari Year 2022". Research Method : This research is an experiment designed One – group pre test – post test design. A sample of 15 people with a quantitative approach. The study population was 20 postpartum mothers who attended TPMB Rennie Yuwitasari. The sampling method used consisted of a total sample of 20 people who were divided into two groups, namely 10 groups receiving green beans and 10 groups receiving katuk leaves. The sampling technique used was accidental sampling. Research results: It is known that the Hb assessment before giving katuk leaves obtained an average value of 10.300 and a standard deviation of 0.7832 with a minimum Hb rating of 8.8 and a maximum of 11.4 while after giving katuk leaves , the mean value was 11.230, with a standard deviation of 0.5877, and the Hb value ranged from 9.8 to 12.0. We got Asimp. The Sig (2-Sided) value is 0.169, and because 0.169 > 0.05 the hypothesis is not proven. This means that there is no difference in giving katuk leaves or green beans to increase hemoglobin levels. So that it can be concluded that bivariate data analysis, namely green beans and katuk leaves have the same effectiveness value in increasing Hb levels in postpartum mothers at TPMB Rennie Yuwitasari. Conclusions and Suggestions: The findings of this study are expected to increase postpartum mothers' understanding of increasing Hb levels by consuming green beans and katuk leaves which have been proven to increase Hb levels.

Keywords: *Administration of carrot juice, menstrual pain intensity and Hemoglobin.*

I. INTRODUCTION

An iron-rich protein called hemoglobin has an affinity for oxygen, which causes it to produce oxyhemoglobin in red blood cells. O2 (oxygen) will be transported from the lungs to the body's tissues due to this function (Hasanan, 2018). Lack of hemoglobin will result in a shortage of red blood cells (erythrocytes), usually the result of inadequate iron intake or excessive blood loss, and cannot be overcome by eating more. (Fauziah, 2020) Increasing Hb can be done non-pharmacologically by consuming natural foods. According to Sitiyaroh, 2020 which states that the type of treatment is divided into 2 categories, namely pharmacological and non-pharmacological treatment, but in his research he focuses more on non-pharmacology, namely acupressure, aromatherapy, exercise, consumption of natural and traditional foods.

As for Fauziah's research, 2020 which collects all articles related to mung beans and katuk leaves which consists of ten articles about mung beans and two articles about katuk leaves on increasing Hb, the results obtained are that there is an influence of both mung beans and katuk leaves in increasing blood levels. Hb.Based on previous studies on the effectiveness of green beans and katuk leaves, it was found that these foods can increase hemoglobin levels. In the initial survey at TPMB Rennie Yuwitasari, postpartum mothers were still found to be anemic, therefore, it was very interesting for the researchers to conduct a study with the research title "Effectiveness of Mung Beans and Katuk Leaves on Increased Hemoglobin Levels in Giving Mothers at TPMB Rennie Yuwitasari Year 2022"

II. METHODS

This research is an experimental quasi-experimental one group pretest and posttest design with a quantitative approach. The study population was 20 postpartum mothers who attended TPMB Rennie Yuwitasari. The sampling method used consisted of a total sample of 20 people who were divided into two groups, namely 10 groups receiving green beans and 10 groups receiving katuk leaves. The sampling technique used was Accidental sampling. The implementation stage of this study, using primary data that had

been adapted to the research objectives. The implementation stage of this study aimed to find out whether mung bean and katuk leaves were beneficial in increasing hemoglobin levels in postpartum women in the mung bean group. The hemoglobin level will be assessed before the mung bean intervention and then postpartum women are given mung bean, and after eating mung bean twice a day for 14 consecutive days, then on the 15th day the hemoglobin level will be reassessed whether there is an increase in hemoglobin level or whether it remains or not. there is an increase in hemoglobin levels. Likewise, the same was done for the katuk leaf group.

III. RESULT AND DISCUSSION

A. UNIVARIATE ANALYSIS

1. Frequency Distribution of Hb Assessment in Postpartum Mothers in the Green Beans Giving Group in 2022

Hemoglobin	F	%
Before Giving Green Beans	9	90
Mild Anemia	1	10
Moderate Anemia		
After Giving Green Beans	9	90
Not Anemia	1	10
Mild Anemia		

Based on Table 1 above, it can be seen that of the 10 respondents in the group before giving green beans, the majority showed mild anemia criteria, namely 9 people (90%) and moderate anemia, 1 person (10%), while after giving green beans, the majority showed no anemia, totaling 9 people. (90%) and mild anemia amounted to 1 person (10%).

2. Frequency Distribution of Hb Assessment in Postpartum Mothers in the Katuk Leaves Giving Group in 2022

Hemoglobin	F	%
Before Giving Katuk Leaves	7	70
Mild Anemia	3	30
Moderate Anemia		
After Giving Katuk Leaves	8	80
Not Anemia	1	10
Mild Anemia	1	10
Moderate Anemia		

Based on Table 2 above, it can be seen that of the 10 respondents in the group before giving katuk leaves, the majority showed mild anemia criteria, namely 7 people (90%) and moderate anemia, 3 people (30%), while after giving katuk leaves, the majority showed no anemia, totaling 8. people (80%), mild anemia amounted to 1 person (10%) and moderate anemia 1 person (10%)

3. Average Hb in Postpartum Mothers in the Green Beans Giving Group in 2022

Hemoglobin	N	Mean	standar deviasi	Min	Max
Before Giving Green Beans	10	10,350	0,3478	9,4	10,8
After Giving Green Beans		11,190	0,5877	10,6	12,3

Based on table 3 above, it can be seen that the Hb assessment before giving green beans obtained an average value of 10.350 and a standard deviation of 0.3478 with a minimum Hb rating of 9.4 and a maximum of 10.8 while the average value after giving green beans was 11.190 and a standard deviation of 0.5877 with a minimum Hb rating of 10.6 and a maximum of 12.3

4. Average Hb in Postpartum Mothers in the Katuk Leaves Giving Group in 2022

Hemoglobin	N	Mean	standar deviasi	Min	Max
Before Giving Katuk Leaves	10	10,300	0,7832	8,8	11,4
After Giving Katuk Leaves		11,230	0,5877	9,8	12,0

This is evident from table 4 above, it can be seen that the Hb assessment before giving katuk leaves obtained an average value of 10.300 and a standard deviation of 0.7832 with a minimum Hb rating of 8.8 and

a maximum of 11.4 while the Hb value ranged from 9. 8-12.0, with an average value of 11.230 and a standard deviation of 0.5877 after administration of katuk leaves.

5. Normality Test

Prior to bivariate analysis, a normality test was carried out to assess the effect of giving oxytocin massage on the involution of postpartum women. After Levene's tests for homogeneity and normality were completed. This test tries to determine that it is the administration of the intervention group and the control group that causes the average change in uterine changes, not the variation in the respondents. The data is said to be homogeneous if the p-value is greater

score	Kolmogorov-Smirnov[a]	Shapiro-Wilk	Keterangan
before giving green beans	0.200*	0.155	Normal
after giving green beans	0.200*	0.350	Normal
before giving katuk leaves	0.200*	0.923	Normal
after giving katuk leaves	0.138	0.112	Normal

Based on Table 5, the normality test before and after administration of the mung bean group and before and after administration of the katuk leaf group in the Kolmogorov-Smirnova test ($p > 0.05$) and Shapiro-Wilk ($p > 0.05$) were both significant. If sig number greater than 0.05, anything is considered normal; otherwise, it is considered abnormal. Based on these findings, the data on katuk leaf and mung bean groups are generally distributed.

B. BIVARIATE ANALYSIS

1. The Effectiveness of Mung Beans and Katuk Leaves on Increased Hemoglobin Levels in Postpartum Mothers

t-test for Equality of Means		Significance	
		one-sided (p)	two-sided (p)
Hasil	Equal variances assumed	0.085	0.169
	Equal variances not assumed	0.085	0.170

Based on table 6 The results of the independent sample test were obtained. Asymp accepted the findings of the independent sample test. The Sig (2-Sided) value is 0.169, and because $0.169 > 0.05$ the hypothesis is not proven. This means that there is no difference in giving katuk leaves or green beans to increase hemoglobin levels. So that it can be concluded that bivariate data analysis, namely green beans and katuk leaves have the same effectiveness value in increasing Hb levels in postpartum mothers at TPMB Rennie Yuwitasari.

DISCUSSION

The independent sample test results were obtained. Asymp accepted the independent sample test findings. The Sig (2-Sided) value is 0.169, and because $0.169 > 0.05$ the hypothesis is not proven. This shows that giving katuk leaves or green beans to increase hemoglobin levels has no difference. So that it can be concluded that bivariate data analysis, namely green beans and katuk leaves have the same effectiveness value in increasing Hb levels in postpartum mothers at TPMB Rennie Yuwitasari.The findings of this study are consistent with a number of previous studies which examined the effect of giving mung beans or katuk leaves on HB levels. hemoglobin in pregnant women with research analysis carried out twice, namely in the first study a laboratory check was carried out to determine HB levels then after that it was given mung bean extract for 7 days after that the results were assessed by checking Hb levels and the results of the study showed the effect of giving mung bean before and after. In his opinion, green beans are very useful in increasing Hb levels.According to Umi Faridah, 2017, her research stated that foods such as green beans have components needed by blood cells to develop and overcome Hb levels. Phytochemicals in green beans have been shown to support hematopoiesis. The process of making blood cells is called hemopoiesis, also called hematopoiesis. Red blood cells, white blood cells, and platelets are the target blood cells (thrombocytes). Green beans also have vitamins and minerals. Green beans are rich in minerals such as calcium, phosphorus, iron, sodium and potassium. According to research by Idradji, et al (2021) Red blood cells, hemoglobin, total protein, and packed cell volume can all be maintained by katuk leaf supplementation, according to a study on the effect of katuk leaf supplementation in diet on hematological values in blood images of pregnant rabbits.

According to the research findings, administration of kefir, sweet potato leaf juice, and katuk leaf juice to anemic rats improved their hematological profile better than the control group. much more efficient than giving kefir and sweet potato leaf juice.According to Oktaviani (2018) states that due to the high amount of iron found in katuk leaves, katuk leaves are one of the foods that are recommended for consumption in the treatment of anemia. According to Rahayu, et all (2019) decreased Hb levels usually cause anemia. Iron Deficit Anemia is a blood-related condition that most commonly affects people of all ages, including infants, children, adolescents, pregnant women, and all women. This can happen if not enough is absorbed to meet the body's needs, if there is a deficit of iron and less iron is consumed,According to Sukaisi, S., et al (2020) stated that experiencing anemia during the puerperium can cause uterine subinvolution which is one of the causes of puerperal bleeding, thereby facilitating the occurrence of puerperal infections and reducing milk production. Therefore, handling postpartum women who experience anemia or iron deficiency is very important.Based on previous research statements, researchers argue that giving green beans or giving katuk leaves both have good efficacy in treating anemia. So that it can be suggested to the whole community, especially postpartum women who are experiencing anemia or decreased Hb levels, to consume food which is one of the non-pharmacological treatments.

The researcher's opinion is supported by Sitiyaroh N's research (2020) which states that non-pharmacological treatment is medical treatment without the use of drugs that contain chemicals. The limitation of this research is that during data collection there were still many postpartum mothers at TPMB Rennie Yuwitasari which were not carried out as respondents because the respondents had difficulty following the flow of research with consumption of drinks which had to be done routinely and needed to be observed by researchers so that researchers could only do the number of respondents 20 people who are considered to be able to help researchers to carry out this research optimally.

IV. CONCLUSION

According to research findings on the effect of green beans and katuk leaves on increasing hemoglobin levels in postpartum mothers at TPMB Rennie Yuwitasari, it was found:

1. As can be observed, of the 10 group respondents, before giving green beans the majority showed mild anemia criteria, namely 9 people (90%) and moderate anemia 1 person (10%) while after giving green beans the majority showed no anemia totaling 9 people (90%) and mild anemia amounted to 1 person (10%).
2. It can be seen that of the 10 respondents in the group before giving katuk leaves, the majority showed mild anemia criteria, namely 7 people (90%) and moderate anemia, 3 people (30%), while after giving katuk leaves, the majority showed no anemia, totaling 8 people (80 %), mild anemia amounted to 1 person (10%) and moderate anemia 1 person (10%).
3. It is known that the Hb assessment before giving green beans obtained an average value of 10.350 and a standard deviation of 0.3478 with a minimum Hb rating of 9.4 and a maximum of 10.8 while the average value after giving green beans was 11.190, with a standard deviation of 0.5877, and Hb values ranging from 10.6 to 12.3.
4. It is known that the Hb assessment before giving katuk leaves obtained an average value of 10.300 and a standard deviation of 0.7832 with a minimum Hb assessment of 8.8 and a maximum of 11.4 while after giving katuk leaves, the average value is 11.230, with standard deviation of 0.5877, and Hb values ranging from 9.8 to 12.0.
5. Get Asimp. The Sig (2-Sided) value is 0.169, and because 0.169 > 0.05 the hypothesis is not proven. This means that there is no difference in giving katuk leaves or green beans to increase hemoglobin levels. So that it can be concluded that bivariate data analysis, namely green beans and katuk leaves have the same effectiveness value in increasing Hb levels in postpartum mothers at TPMB Rennie Yuwitasari.

REFERENCES

[1] Dewi, D. P., & Astriana, K. (2022). Administration Of Catfish Nuggets (Clarias Batrachus) Mixing With Vatin Leaves (Sauropus Androgynous Merr.) Fe Fortification On Hemoglobin Levels In Anemia Pregnant Women. ***Journal of Nutrition College,*** 11(1), 35–41. https://doi.org/10.14710/jnc.v11i1.31962

[2] Dewi, D. P., & Astriana, K. (2019). Substitution of Katuk (Sauropus androgynous Merr.) Leaf Flour in Making Catfish (Clarias batracus) Nuggets for Anemia Pregnant Women. Proceedings of the National Seminar , 87–93.

[3] Amalia, A. (2016). The Effectiveness of Mung Bean Drink on Increasing Hb Levels. Aipkema National Working Meeting, 6, 13–18. https://media.neliti.com/

[4] Maulina, N., & Indra, P. (2015). The Effect of Mung Beans on Increasing Hemoglobin Levels in Wistar Male White Rats. ***Journal of Chemistry Education***, 7(2), 57–60.

[5] Choirunissa, R., & Manurung, D. R. (2020). The Effect of Giving Mung Bean Extract on Hemoglobin Levels in Pregnant Women at the Sirnajaya Health Center, Serang Baru District, Bekasi, 2019. ***Journal for Quality in Women's Health***, 3(2), 171–176. https://doi.org/10.30994/jqwh.v3i2.72

[6] Carolin, B. T., Suprihatin, Indirasari, & Novelia, S. (2021). Giving Mung Bean Extract to Increase Hemoglobin Levels in Anemia Students. ***Journal for Quality in Women's Health***, 4(1), 109–114. https://doi.org/10.30994/jqwh.v4i1.111

[7] Harahap, Arman ,2018, Macrozoobenthos diversity as bioindicator of water quality in the Bilah river, Rantauprapat, Medan***. J. Phys***.: Conf. Ser. 1116 052026.

[8] A. Harahap, P. Hrp, N.K.A.R. Dewi, Macrozoobenthos diversity as anbioindicator of the water quality in the River Kualuh Labuhanbatu Utara, ***International Journal of Scientific & Technology Research***, 9(4), 2020, pp. 179-183.

[9] A. Harahap, et, all, Macrozoobenthos diversity as anbioindicator of the water quality in the Sungai Kualuh Labuhanbatu Utara, AACL Bioflux, 2022, Vol 15, Issue 6.

[10] Harahap, Arman. 2020. Species Composition & Ecology Index Of The Family Gobiidae At The Mangrove Belawan Of ***Sicanang Island International Journal of Scientific & Technology Research*** Volume 9, Issue 04, April 2020.

[11] Harahap, A., et all (2021), Monitoring Of Macroinvertebrates Along Streams Of ***Bilah River International Journal of Conservation Sciencethis link is disabled***, 12(1), pp. 247–258.

[12] Mamangkey, J., Suryanto, D., et all (2021). Isolation and enzyme bioprospection of bacteria associated to Bruguiera cylindrica, a mangrove plant of North Sumatra, Indonesia, Biotechnology Reports, 2021, 30, e00617.

[13] Putri, F., & Nasution, R. I. (2019). The Effectiveness of Mung Bean Drink on Increasing Hemoglobin Levels in Young Girls at Orphanages in Pekanbaru City. ***Journal of Medical Sciences***, 12(2), 95. https://doi.org/10.26891/jik.v12i2.2018.95-100

[14] Santoso, Mochamad Budi, D. (2018). The Effect of Mung Bean Extract (Vigna Radiata) on Hemoglobin Levels in School-Age Children with Iron Deficiency Anemia. ***Jmcrh,*** 3(2), 108–117./

[15] Study of supplementation of katuk leaves in rations on the hematological value of pregnant rabbit blood. (2021). 52203.

[16] Oktaviani.J. (2018). Katuk (Saorapus androgynus). Cereals For, 51(1), 51.

[17] Official,D.C,&Fibrinika Tuta Setiani. (2020). Literature Review:Application of Non-Pharmacological Therapy to Increased Hemoglobin Levels in Young Women with Anemia. ***Scientific Journal of Health***, 44–52.

[18] Sukaisi, S., Zuraidah, Z., & Nainggolan, L. (2020). Setting the Meal Menu and Administration of Blood Supplementary Tablets to Postpartum Mothers at Pmb Simalungun Regency in 2019. ***Journal of Community Health Greetings (JSSM),*** 2(1), 56–60. https://doi.org/10.22437/jssm.v2i1.11162