

THE EFFECT OF HONEY GIVING TO HEMOGLOBIN LEVEL IN PREGNANT MOTHERS THIRD TRIMESTER WITH ANEMIA AT SUMAJA MAKMUR VILLAGE MUARA ENIM REGENCY IN THE YEAR OF 2022

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ABSTRACT

Anemia is an important health problem worldwide. The World Health Organization (*World Health Organization/WHO*) reports that the prevalence of pregnant women who experience anemia is around 35-75% and is increasing with increasing gestational age . Acacia Crassicarpa honey is often referred to as a drink that can increase hemoglobin levels because of its high iron content. The purpose of this study was to determine the effect of giving honey on the increase in hemoglobin levels of pregnant women in the third trimester with anemia. The research method uses an intervention study with the one group pretest – posttest method. The population in this study were pregnant women in the third trimester with anemia. The sample size is 15 respondents. The statistical test used was the Wilcoxon test with a 95% confidence level. The results showed that the average hemoglobin level before giving honey was 9.4 g/dL , while after giving honey for 15 days the average was 12.6 g/dL. There was a significant effect ($p \text{ value } 0.000 < 0.05$) giving honey on hemoglobin levels of pregnant women with anemia. It can be concluded and the suggestions given are that honey is effective in increasing the Hb levels of pregnant women, it is hoped that after this research ends, various medical parties will socialize pregnant women, especially those suffering from anemia, to regularly consume honey to increase hemoglobin levels of pregnant women.

Keywords : Pregnant Women, HB Levels, Giving Honey, Third Trimester

INTRODUCTION

Anemia is a common blood disorder that occurs when the level of red blood cells (erythrocytes) in the body becomes too low. This can cause health problems because red blood cells contain hemoglobin, which carries oxygen to the body's tissues. Anemia can cause various complications, including fatigue and stress on the body's organs. Having normal red blood cell levels and preventing anemia requires cooperation between the kidneys, the bone marrow is not functioning, or the body is malnourished, so the red blood cell count and normal function may be difficult to maintain (Proverawati, 2021).

Anemia during pregnancy is a public health problem especially in developing countries and is associated with adverse pregnancy outcomes. The World Health Organization (WHO) has defined anemia in pregnancy as a hemoglobin (Hb) concentration of less than 11 g/dl. According to WHO, anemia is considered to have public health significance or a problem if it is found to have an anemia prevalence of 5.0% or higher. Anemia prevalence $\geq 40\%$ in a population is classified as a severe public health problem (Stephan *et al.* , 2018).

(*World Health Organization/WHO*) reports that the prevalence of pregnant women who experience anemia is around 35-75% and increases with increasing gestational age . RI Ministry of Health (2020), reported that according to the 2018 Riskesdas report as many as 48.9% of mothers Pregnant women in Indonesia experience anemia and this percentage has increased compared to the 2013 Riskesdas data, which was 37.1%.

According to WHO, anemia is considered to have public health significance or a problem if it is found to have an anemia prevalence of 5.0% or higher. Anemia prevalence 40% in a population is classified as a severe public health problem (Stephan, 2018). Based on basic health research (Riskesdas, 2018), the prevalence of anemia in pregnant women according to characteristics, namely the age of 15-24 years is 84.6%, age 25-34 is 33.7%, age 35-44 is 33.6%, and the age of 35-44 is 33.6%. 45-54 as much as 24%. based on educational characteristics, anemic pregnant women who did not/have never attended school were 41.5%, did not graduate from SD/MI as many as 42.9%, graduated from SD/MI as many as 50.8%, graduated from SLTP/MTS as many as 51.5%, 50.6% graduated from high school/MA, 31.0% graduated from D1/D2/D3/PT. The characteristics of anemic pregnant women based on occupation are 53% of mothers do not work, 54.4% go to school, 27% work as PNS/TNI/Polri/BUMN/BUMD, 38.5% Private Employees, 29.8% Entrepreneurs, 43% Farmers /farm labour, 55.5% work as laborer/driver/housemaid, the other 39%. Pregnant women with anemia based on place of residence are 48.3% in urban areas, and 49.5% in rural areas.

Based on (Profile of the South Sumatra Provincial Health Office 2019 *in setyowati et al.*, 2021), the prevalence of mild anemia in 2018 from 17 districts and cities amounted to 22,681, the highest being in Muara Enim Regency 4,391 people, Banyuasin 3,269 people and Palembang City 1,780 people. Data on the prevalence of severe anemia from 17 districts amounted to 1,012 people, the highest was in Banyuasin Regency with 165 people, Muara Enim 153 people, Musi Rawas 124 people and Palembang City 13 people. In 2019, the prevalence of mild anemia was 24,404, the highest was Banyuasin Regency, which amounted to 4,216 people, Muara Enim 3,499 people and Palembang City 2,644 people. Meanwhile, the prevalence of severe anemia is 1,078 people, the highest is Musi Rawas Regency, which is 254 people. Muara Enim 160 people and Palembang 145 people.

Anemia in pregnant women can increase the risk of premature birth, maternal and child mortality, and infectious diseases. Iron deficiency anemia in the mother can affect the growth and development of the fetus/infant during pregnancy and afterward. To prevent anemia, every pregnant woman is expected to get a blood-supplementing tablet (TTD) of at least 90 tablets during pregnancy (Penukal Abab Lematang Ilir Health Profile, 2020).

To overcome the problem of anemia due to iron deficiency, pharmacologically, women generally consume iron mineral supplements in tablet form, but can have side effects, namely nausea, vomiting and hardened stools. black (Islamiyah, 2017).

In situations where iron from food is not sufficient for iron needs, it needs to be obtained from iron supplementation. The provision of iron supplementation regularly for a certain period of time aims to increase hemoglobin levels quickly, and needs to be continued to increase iron stores in the body. iron. Administration of TTD with the right dose can prevent anemia and increase iron reserves in the body (Kemenkes RI, 2018).

Giving blood supplement tablets is one of the important efforts and is an effective way because it can prevent and overcome anemia due to iron and or folic acid deficiency. Blood-added tablets are given to women of childbearing age and pregnant women. Pregnant women are given blood-added tablets every day during their pregnancy or at least 90 (ninety) tablets. Data on giving blood-supplemented tablets (TTD) to pregnant women aims to determine the description of the consumption of iron tablets in pregnant women as a risk factor for anemia in pregnant women and to find out the achievement of coverage indicators for pregnant women who receive blood-supplementing tablets that have been set in the Strategic Plan of the Ministry of Health for 2015 – 2019. (South Sumatra Province Report, Riskesdas 2018).

RESEARCH METHODS

This research is a quantitative research using an experimental design. With the approach of the one group pre-test and post-test design, namely research that aims to test hypotheses through an intervention that uses one group and provides pre-test and post-test. Thus the results of the treatment can be known more accurately, because it can compare with the situation before being given treatment (Sugiyono, 2018).

In this design there is no control group or randomization. Research design is a design of how research is carried out. In this design, before the treatment, a pre-test was carried out to examine the hemoglobin level of the sample, then after the intervention, the hemoglobin level was re-examined to see the effect of giving honey on the hemoglobin level of pregnant women.

RESEARCH RESULTS AND DISCUSSION

Results Analysis Univariate

Characteristics Respondents by Age

Table 1 Third trimester of pregnant women n(=15)

Characteristics of Respondents	Group	
	F	%
Age		
Age 20 - 25 Years	2	13.3
Age 26 - 30 Years	13	86.7
Gestational Age		
28 - 30 Weeks	8	53.3
31 - 36 Weeks	7	46.7
parity		
Primigravida	2	13.3
Multigravida	13	86.7
Education		
Elementary (SD - SMP)	1	6.7
Intermediate (SMA/SMK)	12	80
College (S1/S2/S3)	2	13.3

Job status		
Working	2	13.3
Not Working (Housewife)	13	86.7

Based on table 1 above, the demographic data of respondents include age, gestational age, parity, education and employment status. The results of the research that have been carried out, obtained the majority of pregnant women in the third trimester were in the age range of respondents between 26-30 years (86.7%), the majority of respondents were 31-36 weeks gestation (46.7%), the majority of pregnant women with obstetric status were in multigravida (86.7%), the majority were from secondary education background (SMA/SMK) (80 , 0 %) and the last majority of the employment status of pregnant women in the third trimester is not working or housewives (86 , 7 %) .

Descriptive Statistics of HB Levels Before and After Drinking Honey

Based on the results of the study, obtained the level of HB levels before and after giving honey .

Table 2. Average HB Levels Before and After Drinking Honey

Group	N	Minimum	Maximum	mean	Difference
Before	15	8.5	10.1	9.493	3.114
After	15	11.5	13.9	12.607	

Based on table 2 above, it can be seen that the minimum value of Hb levels before being given honey is 8.5 gr/dL and a maximum of 10.1 gr/dL , the *mean value* of Hb before being given honey was 9.493 gr/dL , and the standard deviation of Hb before being given honey was 0.496. While the minimum value of Hb level after being given honey is 11.5 g/dL and a maximum of 13.9 g/dL , the *mean value* is 12.607 g/dL and the standard deviation value is 0.670, where there is a difference in HB levels before being given honey and after being given honey of 3.114 g/dL .

Results of Bivariate Analysis

Normality Test

The normality test in this study uses the *Shapiro Wilk test* , with criteria if the p value > 0.05 then the data is normally distributed and if p < 0.05 then the data is not normally distributed

Table 3. Data Normality Test (Shapiro Wilk)

Provision of Honey Drinking on HB Levels for Pregnant Women in the Third Trisemester

Group	Sig A	n	A	Information
Before-After Giving Honey	0.200	15	0.05	Normal Distributed

Based on table 3 above, it can be seen that the normality test of the data using the Shapiro Wilk test showed that the average of giving honey to pregnant women in the third trimester before and after had a p value > 0.05, which means that the data is normally distributed.

Homogeneity Test

Test This is done by comparing the *pretest* HB levels in the experimental group with pretest HB levels in the control group. The statistical test used is the *independent sample t test*.

Table 4. Homogeneity Test (Levene)
Provision of Honey Drinking on HB Levels for Pregnant Women in the Third Trimester

Group	Levene Statistics	df1	df2	Sig.
Before after	0.666	1	28	0.421

Based on table 4 above, a data is said to be homogeneous if the significance value is more than 0.05. From the calculation of the data above, it can be seen that the Levene Statistic is 0.666 with a significance value of 0.421. The data is in the homogeneous category.

Independent Test t Test

Bivariate analysis was carried out to determine whether or not there was an effect of giving honey on hemoglobin levels in third trimester pregnant women by using the Independent T-Test analysis:

Table 5. Hypothesis Test (t Test)
The Effect of Honey Giving on Hemoglobin Levels of Pregnant Women in the Third Trimester

Third trimester pregnant women	mean	Std. Deviation	t	P
Before Giving Honey	9,493	0.2153	14,457	0.000
After Giving Honey	12,607			

Based on the results of table 5 above, statistical tests on the effect of giving honey on hemoglobin levels of pregnant women in the third trimester using *Paired Sample T-Test* alpha 5% (0.05) obtained a significance value (≤ 0.05), then H_0 was rejected, so it can be concluded. it was concluded that there was a significant effect between giving honey before and after giving honey on hemoglobin levels of pregnant women in the third trimester.

Discussion

Hemoglobin Levels Before Giving Honey to Pregnant Women in Semester III

The results of this study illustrate that the hemoglobin levels of pregnant women in the third semester before giving honey were mostly in the low category with a minimum value of 8.5 g/dL and a maximum value of 10.1 g/dL. The results of this study indicate that the Hb levels of pregnant women in the third trimester are still below normal, as stated by Prawiroharjo (2010) that Hb levels in pregnant women can be said to be normal if the hemoglobin in the blood is around 11gr – 12gr/100ml, which is This means that in this condition there are still pregnant women who experience anemia.

Based on research conducted by Ririn Rianti (2021) with the title "The Effect of Honey Giving on Hemoglobin Levels of Pregnant Women in the Third Trimester at BPM Ny "T" Purwadadi Subang District, Subang Regency.

Based on the univariate test above, it is known that 13 respondents (86,7%) had low hemoglobin levels at the age of 26-36 years . The 2013 Basic Health Research (Riskesdas) whose results were published by the Ministry of Health of the Republic of Indonesia, it is known that the incidence of anemia in adolescent girls 13-18 years and women of childbearing age 15-49 years is 22.7% of the total prevalence of anemia in Indonesia (21 ,7% of the Indonesian population), although it is lower than the incidence in pregnant women 37.1%, children aged 5-12 years 29% and toddlers 28.1% .

Plasma volume increases 45-65% starting from the 2nd trimester of pregnancy, and is maximum at the 9th month and increases by about 1000 ml, decreases slightly by term and returns to normal 3 months after delivery. Stimuli that increase plasma volume such as placental lactogen, which causes an increase in aldosterone secretion (Astriana, 2017). Prevention of anemia in pregnant women can be done by giving iron tablets and improving the quality of daily food. The need for Fe (iron) during pregnancy is on average close to 800 mg. This requirement consists of 300 mg required for the fetus, and the placenta and another 500 mg used to increase maternal hemoglobin mass. So the more often women experience pregnancy and childbirth , the more iron will be lost . If the supply of Fe reserves is minimal, each pregnancy will deplete the body's Fe supply and eventually cause anemia in the next pregnancy (Manuaba, 2010).

According to researchers from the results of research that has been carried out on giving honey to pregnant women in the third semester in Sumaja Makmur Village, Muara Enim Regency, most of them experience low HB levels at the age of 26-30 years, because the presence of low Hb levels can make mothers Pregnant women with anemia are usually characterized by various symptoms including weakness, lethargy, dizziness and others. Pregnant women who experience anemia are caused by iron deficiency. The nutritional content of honey can provide benefits and provide the beneficial effects of different antioxidants, especially vitamins C and E, which are found in various models of healing diseases in mice and humans using active antioxidants. Vitamin C is able to remove reactive oxygen compounds in neutrophil cells, monocytes, lens and retina proteins (Erejuwa et al., 2012).

Hemoglobin Levels After Giving Honey to Pregnant Women in the Third Trimester

The results of this study illustrate that the levels of HB after giving honey drink mostly in the low category with a minimum value of 11.5 gr/dl and a maximum value of 13.3 gr/dl. The results of this study indicate that the Hb levels of pregnant women in the third trimester have changed very well, where the Hb levels in pregnant women can be said to be normal if the hemoglobin in the blood ranges from 11gr – 12gr/ 100ml .. This shows a significant increase in the administration of honey . on HB levels .

Effects of Giving Honey on Hemoglobin Levels of Pregnant Women Third trimester

Based on the results of the research conducted by the researcher and the Shapiro Wilk normality test and the *independent T test have been analyzed* . Showing that there is an effect of giving honey on the Hb level of pregnant women in the third trimester , it is known that the average Hb before being given honey is 9.49 gr/dl, the Hb level after the intervention of giving honey is 12.60gr/dl. The results obtained a significant value value (≤ 0.05) which means that there is an effect of giving honey

on Hb levels before and after the intervention.

Honey. The research is in line with Dewi Y (2021) regarding "Honey Consumption Increases Hb in Pregnant Women in Jati Baru Village, Tanjung Bintang District, South Lampung Regency" where the results of the study show an increase in Hb levels after being given honey.

Research Limitations

In this study, researchers still found various limitations in the study, while some of the limitations of the study were as follows:

- 1) In this study, researchers also have limitations, namely inviting respondents to give honey because of the perceived HB levels . So that researchers provide a lot of direction so that they believe that this research is useful for them
- 2) In this study, there are still many shortcomings and it is not perfect, this is because the research is a beginner, where this research is the initial research of the researcher
- 3) This study only conducted an assessment of the effect of honey on HB levels so that further research needs to be developed to examine the effect of other factors that have not been studied on increasing HB levels.

CONCLUSION

Conclusion

Based on the results of data analysis and discussion that has been stated, it can be concluded that:

- 1) Characteristics of respondents I Mrs. Pregnant First Trimester II Anemia In Sumaja Makmur Village, Muara Eni m Regency, the majority aged 20-36 years with obstetric status are multigravida .
- 2) The hemoglobin level of pregnant women in the third semester before the intervention of giving Acacia c rassicarpa honey was 8.5 g/dL for the lowest Hb and 10.1 g/dL for the highest Hb, with an average of 9.49 3 g/dL
- 3) The hemoglobin level of pregnant women in the third semester after the intervention of giving Acacia c rassicarpa honey was 11.5 g/dL for the lowest Hb and 13.3 g/dL for the highest Hb, the Hb level after being given honey, with an average of 12.607 g/Dl.
- 4) There is a significant effect on the consumption of Acacia c rassicarpa honey on the increase in hemoglobin levels in third trimester pregnant women.

Suggestion

- 1) For Pregnant Women

The results of this study can be used as input to add insight , especially about dates and honey to pregnant women with anemia .

- 2) For Midwives

As one of the promotive and preventive efforts for midwives in dealing with the problem of increasing hemoglobin in pregnant women by giving Acacia c rassicarpa honey on a regular basis, it can increase hemoglobin levels of pregnant women in the third trimester.

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