

## DATE JUICE CAN INCREASE THE HEMOGLOBIN OF POST PARTUM MOTHERS

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### ABSTRAK : SARI KURMA DAPAT MINGKTKAN HEMOGLOBIN PADA IBU NIFAS

Latar Belakang : Anemia merupakan masalah gizi yang mempengaruhi jutaan orang di negara berkembang. Prevalensi anemia diperkirakan 9% di negara maju, sedangkan di negara berkembang prevalensinya 43%. Anak dan wanita usia subur (WUS) merupakan kelompok yang paling berisiko, dengan estimasi prevalensi anemia pada anak balita sebesar 47%, pada ibu hamil sebesar 42%, dan pada ibu tidak hamil usia 15-49 tahun sebesar 30%. Jika dilihat penyebab kematian ibu di Provinsi Lampung tahun 2019 disebabkan oleh perdarahan sebanyak 29 kasus (26,3%), hipertensi sebanyak 31 kasus (28,1%), infeksi sebanyak 3 kasus, gangguan sistem peredaran darah sebanyak 4 kasus (3,6%), gangguan metabolisme sebanyak 1 kasus (0,9%) dan lainnya sebanyak 42 (38,1%). Kabupaten Lampung Tengah memiliki kasus kematian ibu tertinggi sebanyak 16 kasus, sedangkan terendah di Kabupaten Tulang Bawang Barat sebanyak 2 kasus.

Tujuan : Untuk mengetahui efektivitas pemberian sari kurma terhadap peningkatan kadar hemoglobin pada ibu nifas di Desa Kesumadadi Kecamatan Bekri Kabupaten Lampung Tengah.

Metode Penelitian: Jenis penelitian ini adalah kuantitatif, desain penelitian pra-eksperimental dengan pendekatan pretest-posttest with control group. Populasi ibu nifas di Desa Kesumadadi Kecamatan Bekri Kabupaten Lampung Tengah rata-rata 3 bulan terakhir yaitu Januari-April 2022 sebanyak 39 orang, sampel masing-masing kelompok sebanyak 15 responden. Teknik pengambilan sampel adalah purposive sampling. Analisis data adalah univariat dan bivariat (uji t-independen). Penelitian dilaksanakan pada tanggal 06 Juli sampai dengan 31 Juli 2022

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Hasil: Peningkatan kadar HB ibu nifas sebelum diberikan sari kurma pada kelompok intervensi dengan rerata 10,247 gr/dl, nilai min 9,5gr/dl dan nilai maksimal 10,8gr/dl, setelah diberikan kurma jus dengan rata-rata 11,153gr/dl, nilai min 10,5gr/dl dan nilai maks 11,6gr/dl. Peningkatan kadar HB ibu nifas pada kelompok kontrol, pada hari ke-1 dengan rerata 10,293gr/dl, nilai min 9,3gr/dl dan nilai maks 10,8gr/dl. Hari ke-14 dengan rerata 10,800gr/dl, nilai min 10,3gr/dl dan nilai maks 11,2gr/dl. Simpulan: Hasil uji statistik diperoleh P-value = 0,000 (<0,05) yang berarti ada efektivitas pemberian jus kurma dengan peningkatan kadar hemoglobin pada ibu nifas di Desa Kesumadadi Kecamatan Bekri Kabupaten Lampung Tengah Tahun 2022 .

Saran : Diharapkan kepada petugas kesehatan khususnya BPM dan Puskesmas agar secara rutin memberikan penyuluhan kepada ibu nifas tentang pentingnya mengkonsumsi makanan yang mengandung zat besi dan mengkonsumsi makanan yang kaya gizi dan mengandung vitamin C seperti sari kurma.

Kata Kunci : Ekstrak Kurma, Peningkatan Kadar Hemoglobin, Ibu Nifas

### ABSTRACT

Background : Anemia is a nutritional problem that affects millions of people in developing countries. The prevalence of anemia is estimated at 9% in developed countries, while in developing countries the prevalence is 43%. Children and women of childbearing age (WUS) are the group most at risk, with an estimated prevalence of anemia in children under five by 47%, in pregnant women by 42%, and in non-pregnant women aged 15-49 years by 30%. When viewed, the causes of maternal deaths in Lampung Province in 2019 were caused by bleeding as many as 29 cases (26.3%), hypertension as many as 31 cases (28.1%), infection as many as 3 cases, circulatory system disorders as many as 4 cases (3, 6%), metabolic disorders in 1 case (0.9%) and others in 42 (38.1%).

Central Lampung district had the highest maternal mortality case of 16 cases, while the lowest was in Tulang Bawang Barat district of 2 cases

Purpose : To find out the effectiveness of giving dates juice with an increase in hemoglobin levels in postpartum mothers in Kesumadadi Village, Bekri District, Central Lampung Regency.

Research Methods: This type of research is quantitative, pre-experimental research design with a pretest–posttest approach with control group. The population of postpartum mothers was 39 people in Kesumadadi Village, Bekri District, Central Lampung Regency in an average of the last 3 months, namely January-April 2022, a sample of 15 respondents in each group. The sampling technique is purposive sampling. Data analysis was univariate and bivariate (t-independent test). The research was carried out on July 06 to July 31, 2022

Results: Increased HB levels of postpartum women before being given date palm juice in the intervention group with a mean of 10,247 gr/dl, a min value of 9.5gr/dl and a max value of 10.8gr/dl, after being given date palm juice with a mean of 11,153gr/dl, a min value of 10.5gr/dl and max value 11.6gr/dl. The increase in HB levels of postpartum mothers in the control group, on day 1 with a mean of 10.293gr/dl, a min value of 9.3gr/dl and a max value of 10.8gr/dl. Day 14 with a mean of 10,800gr/dl, a min value of 10.3gr/dl and a max value of 11.2gr/dl. Conclusion: The results of statistical tests obtained a P-value = 0.000 (<0.05) which means that there is an effectiveness of giving date juice with an increase in hemoglobin levels in postpartum mothers in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022.

Suggestion: It is expected for health workers, especially BPM and Puskesmas, to regularly provide counseling to postpartum mothers, about the importance of consuming foods containing iron and consuming foods rich in nutrition and containing vitamin C such as date palm juice.

Keywords : Dates Extract, Increase in Hemoglobin Levels, Postpartum Mothers

## INTRODUCTION

Anemia is a condition of decreased hemoglobin, hematocrit and eritreocyte count below normal values. In patients with anemia, more often called less blood, levels of red blood cells (hemoglobin) below normal values. The cause can be a lack of nutrients for blood formation, for example iron, folic acid and vitamin B12. But what often happens is anemia due to iron deficiency (Utami, & Wulandari, 2021).

Anemia is a nutritional problem that affects millions of people in developing countries. The prevalence of anemia is estimated at 9% in developed countries, while in developing countries the prevalence is 43%. Children and women of childbearing age (WUS) are the most at-risk groups, with an estimated prevalence of anemia in toddlers at 47%, in pregnant women at 42%, and in non-pregnant women aged 15-49 years at 30%. The World Health Organization (WHO) targets a 50 percent reduction in anemia in WUS by 2025 (World Health Organization, 2021).

According to the World Health Organization (WHO), an estimated 536,000 women worldwide have died from childbirth. Of these, 99% of these occur in developing countries (Septiawan, & Sugerta, 2016). In Indonesia in improving public health status, the indicator that will be achieved is the decline in maternal mortality from 359 per 100.00 live births in SDKI 2012 to 306 per 100,000 live births

in 2019 (Ministry of health of the Republic of Indonesia, 2019).

The success of maternal health programs can be assessed through the main indicator of Maternal Mortality Rate (MMR). Maternal mortality in this indicator is defined as all deaths during the period of pregnancy, childbirth and puerperium caused by pregnancy, childbirth and puerperium or their management but not due to other causes such as accidents or incidental. The maternal mortality rate (MMR) is all deaths within this scope in every 100,000 live births (profile of the Ministry of health of the Republic of Indonesia, 2020).

The number of maternal deaths collected from the recording of family health programs at the Ministry of Health in 2020 showed 4,627 deaths in Indonesia. This number shows an increase compared to 2019 of 4,221 deaths. Based on the causes, most maternal deaths in 2020 were caused by bleeding in 1,330 cases, hypertension in pregnancy in 1,110 cases, and circulatory system disorders in 230 cases (profile of the Ministry of health of the Republic of Indonesia, 2020).

When viewed, the causes of maternal death in Lampung Province in 2019 were caused by bleeding in 29 cases (26.3%), hypertension in 31 cases (28.1%), infection in 3 cases, circulatory system disorders in 4 cases (3.6%), metabolic disorders in 1 case (0.9%) and others in 42 (38.1%). the case of Central Lampung Regency has the highest maternal death cases of 16 cases, while the

lowest is in West Tulang Bawang regency of 2 cases (Lampung Provincial Health Office, 2020). Based on data from the Kesumadadi Health Center in 2020-2021, the maternal mortality rate was 1% of people per 100,000 live births. Puerperal services 100% provision of vitamin A in puerperal mothers by 100%, handling of obstetric komplikasi by 100%. Family planning services amounted to 82.4% of active family planning and 17.6% of Family Planning (Central Lampung Provincial Health Office, 2021).

Puerperium (puerperium) is a period that begins after the placenta comes out and ends when the womb tools recover as before and lasts about 6 weeks. Most maternal deaths occur in the puerperium, which is 54.55%. The postpartum period at risk of maternal death mainly occurs in the immediate postpartum period (50%), in the early postpartum period (20%) and the latepostpartum period (5%) (Febriani, & Juwita, 2021). Common causes of postpartum hemorrhage are the general state of weak mothers due to anemia, multiparity, post-operative measures, excessive uterine distension, maternal fatigue, labor trauma, with impaired contractions (Yasin, 2021).

Anemia in puerperal (postpartum) women is also common, about 10% and 22% occur in postpartum women from poor families (Department of Nutrition and Public Health, 2015). Anemia in puerperal mothers can occur due to bleeding and thus lack of many elements of iron. The need for iron increases, with bleeding, gemeli, multiparity, the older the pregnancy. Absorption is abnormal or the gastrointestinal tract is disrupted, for example vitamin C deficiency so that Fe absorption is disrupted. Intake is less for example the quality of the menu is bad or vomiting continues. The problem is, today many mothers are still less precise in the consumption of Fe Tablets (Amanda, 2018).

As a result of anemia in the puerperium is the occurrence of uterine subvolutio that can cause post-partum bleeding facilitate infection of the puerperium, reduced breast milk expenditure and easy infection of the mammary gland. Anemia in the puerperium is a continuation of anemia suffered during pregnancy, which causes many complaints for the mother and reduces the percentage of work, both in daily housework and in caring for the baby (Wijarnarko, 2010; Amanda, 2018).

Efforts to prevent and overcome postpartum anemia such as Fe tablets for 4 weeks. Some researchers found that iron absorption with a combination of Vitamin A can increase Hb levels (Permaesih et al, 2011) as well as Fe administration with Vitamin C has a significant increase (Pradanti et al, 2015; Amanda, 2018)

While non-pharmacological to deal with anemia can be done by consuming dates, beets, bananas ambon banana mas, spinach juice, long bean stew and carrots. Beets are a source of Vitamin C, in addition beets also contain Vitamin B and Vitamin A so it is recommended for people with low blood pressure. To reduce the number of postpartum anemia can be done by increasing hemoglobin levels, one of which is by consuming date palm juice which can increase hemoglobin levels, according to Dwi Amalia's research (2018) which states that date fruit extract can increase hemoglobin levels. The combination of dates rich in glucose, Ca, Fe, Zn, Cu, P and niacin with palmyra rich in vitamins A, Na and K is able to improve hemoglobin levels in anemia patients (Harnetacia, 2020).

The fruit of the date palm tree is often consumed by the community because it is high in nutrients and has great potential as a remedy for various diseases (Vayalil, 2012). Unlike most other fruits, dates contain high carbohydrates so they can provide enough energy. Most of the sugar content consists of glucose, fructose, and sucrose, although the sugar content in high dates reaches 70%, namely 70-73 grams per 100 grams of dry weight, the sugar content has been processed naturally and is not harmful to health (Satuhu, 2010). According to data from the Ministry of Health, Hajj explains that iron levels in dates are also quite high, namely 0.90 mg per 100 grams of dates (11% RDA), where iron becomes one of the components in the blood to carry oxygen in the blood (Setiowati, 2018).

To reduce the number of postpartum anemia can be done by increasing hemoglobin levels, one of which is by consuming date juice that can increase hemoglobin levels, according to previous research which states that date fruit extract can increase hemoglobin levels. The combination of dates rich in glucose, Ca, Fe, Zn, Cu, P and niacin with palmyra rich in vitamins, Na and K is able to improve hemoglobin levels in anemia patients (Febriani, & Juwita, 2021).

According to previous research on "the benefits of date palm juice in increasing HB of puerperal mothers in Pekanbaru city" the administration of date palm juice to increase hemoglobin levels in puerperal mothers, carried out with a T test, obtained a p-value of 0.000 or p-value < (1) (0.005), this indicates that there is an influence or effectiveness before and after the administration of date palm juice to increase hemoglobin levels in puerperal mothers in the Pekanbaru city area (Febriani, & Juwita, 2021).

Based on preliminary data conducted in Kesumadadi Village, Bekri District, Central Lampung Regency, there were 121 puerperal mothers in January-February 2021, and at least 107 puerperal mothers had their puerperal hb checked, so that 39 pregnant women with normal hb 11.3-12.0 gr/dl and 55 mothers had mild anemia with hb values of 10.6-11.0 gr/dl and 13 puerperal mothers had severe anemia with hb values <10.5 gr/dl. For the treatment of anemia in UPTD Puskesmas Kesumadadi Bekri District has been done thoroughly by distributing fe tablets to puerperal mothers, while herbal therapy has not been done tertanan and programmed, herbal therapy is done only in the form of health education and when done posyandu. From the results of pre-survey researchers interested in conducting research on the effectiveness of date palm juice with an increase in hemoglobin levels in postpartum mothers. This is viewed from the factor of iron content and protein contained in the juice of dates given to postpartum mothers.

## RESEARCH METHODS

This research is a quantitative research with Quasi-experimental research design. The object of research is the provision of date palm juice to increase HB in postpartum mothers, the research subject is Postpartum mothers, the study will be conducted in Kesumadadi Village, Bekri District, Central Lampung Regency, the study was carried out on July 06 to July 31, 2022. Data collection using observation sheet. Univariate and bivariate data analysis (independent t-test)

## RESULTS

### Characteristics Of Respondents

From table 1 above, it can be seen the general characteristics of puerperal mothers in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, by looking at the age of 20-35 years as many as 12 respondents (80.0%), a history of anemia 2

respondents (13.3%) in the intervention group, and 6 responses (40.0%) Magh 5 respondents (16.6%) in the intervention group and anemia as many as 6 respondents (40.0%) in the control group, the highest BMI was Ideal BMI 14 respondents (93.3%), the highest education was high school as many as 10 respondents (66.7%) in the intervention group and 8 respondents (53.3%) in the control group. The average work of housewives as many as 8 respondents (53.3%).

**Table 1**  
**General Characteristics Of Postpartum Mothers In Kesumadadi Village, Bekri District, Central Lampung Regency In 2022**

Characteristics	Intervention		Control	
Age				
Not At Risk	12	80,0	12	80,0
At risk	3	20,0	3	20,0
History Of The Disease				
Anemia	2	13,3	6	40,0
DBD	1	6,7	-	-
Magh	5	33,3	-	-
Malaria	1	6,7	-	-
No	5	33,3	9	60,0
Tipes	1	6,7	-	-
IMT				
IMT Ideal	14	93,3	14	93,3
BMI is not Ideal	1	6,7	1	6,7
Education				
D3	1	6,7	1	6,7
S1	1	6,7	4	26,7
High school	10	66,7	8	53,3
SMP	3	20,0	2	13,3
Jobs				
Housewife	8	53,3	8	53,3
PNS	1	6,7	4	26,7
Self-employed	6	40,0	3	20,0

### Univariate Analysis

HB puerperal mother before given Sari Kurma

**Table 2**  
**Increased Hb levels of puerperal mothers before being given sari Kurma to an intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022**

Hemoglobin	N	Mean	SD	SE	Min-Max
Pretes	15	10,247	0,4274	0,1104	9,5-10,8

From table 2 above, it can be seen that the increase in postpartum maternal HB levels before being given date palm juice in the intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, with a Mean of 10.247

gr/dl, a min value of 9.5 gr/dl and a max value of 10.8 gr/dl.

Postpartum Mother's HB After Being Given Dates Palm

From table 3 above, it can be seen that the increase in postpartum maternal HB levels after being given date palm juice in the intervention group in Kesumadadi Village, Bekri District, Central

Lampung Regency in 2022, with a Mean of 11.153 gr/dl, a min value of 10.5 gr/dl and a max value of 11.6 gr/dl.

**Table 3**  
**Increased postpartum maternal HB levels after being given date palm juice to an intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022**

Hemoglobin	N	Mean	SD	SE	Min-Max
Posttest	15	11,153	0,3563	0,0920	10,5-11,6

Hb control group Days 1 and 14

From table 4 it can be seen that the increase in HB levels for nifaopo women in the control group at Deodok Keycamadadi, Bekri District, Central Lampung Regency, 2022, day 1 with a mean of 10.293 gr/dl, min value 9.3 gr/dl and max value 10.8 gr/dl. Happy 14th with a mean of 10.800 gr/dl min value 10.3 gr/dl and max value 11.2 gr/dl.

**Table 4**  
**Increased Hb levels of puerperal Mothers Day 1 and Day 14 in the control group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022**

Hemoglobin	N	Mean	SD	SE	Min-Max
Day 1	15	10,293	0,4818	0,1244	9,3-10,8
Day 14	15	10,800	0,2699	0,0697	10,3-11,2

**Bivariate Analysis**

**Table 5**  
**The Effectiveness Of Giving Date Palm Juice With An Increase In Hemoglobin Levels In Postpartum Mothers In Kesumadadi Village, Bekri District, Central Lampung Regency In 2022**

Hemoglobin	N	Mean	Mean Difference	SD	SE	P – Value
Pretest	Intervention	15	10,247	0,4274	0,1104	0,781
	Control	15	10,293		0,4818	
Postes	Intervention	15	11,153	0,3533	0,0920	0,005
	Control	15	10,800		0,2699	

From table 5 it can be seen that the increase in postpartum maternal HB levels before being given sari kurma in the intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, with a Mean of 10.247 gr/dl, a min value of 9.5 gr/dl and a max value of 10.8 gr/dl, and a control group on Day 1 with a Mean of 10.293 gr/dl, a min value of 9.3 gr/dl and a max value of 10.8 gr/dl.

Increased levels of postpartum maternal HB after being given date palm juice in the intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, with a Mean of 11.153 gr/dl min value of 10.5 gr/dl and max value of 11.6 gr/dl, and in the control group Day 14 with a Mean of 10.800 gr/dl min value of 10.3 gr/dl and max value of 11.2 gr/dl

The results of statistical tests obtained by the mean postes difference test of 0.3533 p-value = 0.000 (<0.05) which means that there is an effectiveness of giving date palm juice with an increase in hemoglobin levels in postpartum mothers in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022.

**DISCUSSION**

**Univariate Analysis**

Increased Hb levels of puerperal mothers before being given sari Kurma to the intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022

Increased levels of postpartum maternal HB before being given sari kurma in the intervention group in Kesumadadi Village, Bekri District, Central

Lampung Regency in 2022, with a Mean of 10.247 gr/dl, a min value of 9.5 gr/dl and a max value of 10.8 gr/dl.

In line with research conducted by Febriani & Juwita (2021) with the title "benefits of date palm juice in increasing postpartum maternal HB in Pekanbaru city" the results of postpartum maternal hemoglobin levels before the lowest intervention were 9.25 gr% and the highest were 11.4 gr%, then after the intervention was given, the lowest hemoglobin levels in postpartum mothers were 11.3 gr% and the highest was 14.34 gr%.

In line with The Theory of Manuaba (2010) Anemia is a condition in which the mass of erythrocytes and/or circulating hemoglobin mass can not fulfill its function to provide oxygen to body tissues. Laboratorically described as a decrease below normal hemoglobin levels erythrocyte count and hematocrit (packed red cell) less than normal. Anemia is a condition of decreased levels of hemoglobin, hematocrit, and red blood cell count below 11 gr/dl.

According to researchers anemia is a condition where maternal Hb levels below normal. Low Hb content can indicate anemia, with symptoms such as weakness, lack of appetite, lack of energy, decreased concentration, headache, easy infection, Firefly eyes, in addition to the eyelids, lips, and nails look pale. The most common causes of anemia during the puerperium are iron deficiency and blood loss due to postpartum.

Increased postpartum maternal HB levels after being given date palm juice to an intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022

The increase in postpartum maternal HB levels after being given sari kurma to the intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, with a Mean of 11.153 gr/dl, a min value of 10.5 gr/dl and a max value of 11.6 gr/dl.

In line with the research conducted by Setiowati (2018) with the title "the influence of Palm extract (Phoenix Dactylifera) to increase of Hemoglobin Level To Trimester III Pregnant Woman", it is known that before and after being given Palm extract respondents who experienced hemoglobin levels increased almost entirely (93.75%) and a small part (6.25%) hemoglobin levels did not increase.

In line with The Theory of Bakta (2017). Anemia is a condition in which the erythrocyte mass and or circulating Hb period cannot fulfill its function to provide oxygen for body tissues. Laboratorically

described as a decrease below normal hemoglobin levels. Count erythrocytes and hematocrit (Packed red cell). Manuaba (1998; Natalia (2015) stated post partum bleeding due to uterine atony and uterine involution, facilitate infection of the puerperium, reduced breast milk expenditure, sudden cord compensation after delivery, easy to occur mammary infection.

In this study, the value of Hb levels after being treated using date palm juice increased on average per respondent HB with a difference score of 0.2-2 gr/dL on 14 days of intervention. This is because the regularity of the mother when consuming date palm juice is the cause of the increase in postpartum maternal Hb. Date palm juice, which is rich in its content, contains components that are able to increase the absorption of iron or play a role in the formation of red blood cells in which hemoglobin is located. In this study, researchers used date palm juice containing fructose glucose and vitamin C contained in date palm juice can help the absorption of iron. Date palm juice contains various vitamins, minerals, antioxidants etc. According To Abu., Ouf (2015) in the absorption of iron in the body, it is closely related to the acidic environment that helps the absorption of iron, which occurs in the first and second sections of the small intestine. Iron absorption is therefore enhanced by co-administration of acidic compounds, such as Vitamin C or ascorbic acid.

Increase in HB Levels for Postpartum Mothers Day 1 and Day 14 in the Control Group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022

Increased Hb levels of postpartum mothers in the control group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, Day 1 with a Mean of 10.293 gr/dl, a min value of 9.3 gr/dl and a max value of 10.8 gr/dl. Day 14 with Mean 10,800 gr/dl min value 10,3 gr/dl and max value 11,2 gr/dl.

In line with the research conducted by the research by Harmoko (2017) with the title "effectiveness of giving dates to Hemoglobin levels in adolescent girls Anemia in Ma Tahfizh Nurul Iman Karanganyar" the average result of hemoglobin levels after giving dates in the treatment Group amounted to 11.81 (4) 1.41 gr/dl. Measurement of hemoglobin levels after the control group obtained an average of hemoglobin levels of 11.62±0.79 gr / dl.

In line with the theory of Siviana (2012) puerperal Anemia is defined as a hemoglobin level of less than 10 gr/dl, this is a common problem in obstetrics although pregnant women with guaranteed

iron levels hemoglobin concentration usually ranges from 11-12 gr/dl before pregnancy.

In the opinion of researchers, the increase in Hb in the control group was due to the regularity of puerperal mothers in consuming Fe tablets, and the food consumed by mothers during the puerperium helped the absorption of iron, so that when done on Day 14 HB the mother experienced an increase.

### **Bivariate Analysis**

The Effectiveness Of Giving Date Palm Juice With An Increase In Hemoglobin Levels In Postpartum Mothers In Kesumadadi Village, Bekri District, Central Lampung Regency In 2022

The results of statistical tests obtained by the mean postes difference test of 0.3533 p-value = 0.000 (<0.05) which means that there is an effectiveness of giving date palm juice with an increase in hemoglobin levels in postpartum mothers in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022.

In line with the results of Setiowati's research (2018) with the title "the influence of Palm extract (Phoenix Dactylifera) to Increase of Hemoglobin Level To Trimester III Pragnant Woman" the test used is an alternative Wilcoxon Test Test to get the p value (Exact. Sig/2 tailed) 0.002 (<0.05) means there is a difference in hemoglobin levels before and after given sari kurma. Therefore, H0 is rejected and H1 is accepted, which means there is an influence of date palm juice (phoenix dactylifera) on the increase in hemoglobin levels of pregnant women in the third trimester.

In line with the opinion expressed by Natalia, (2015) Hemoglobin is a protein complex consisting of iron-containing heme and globin with the interaction between heme and globin which causes Hemoglobin (Hb) is irreversible to transport oxygen. Iron along with proteins (globins) and protoporphyrins have an important role in the formation of hemoglobin.

In this study, Hb levels of puerperal mothers before being given sari kurma were increased in the intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, with a Mean of 10.247 gr/dl, a min value of 9.5 gr/dl and a max value of 10.8 gr/dl, and a control group on Day 1 with a Mean of 10.293 gr/dl, a min value of 9.3 gr/dl and a max value of 10.8 gr/dl. Increased levels of postpartum maternal HB after being given date palm juice in the intervention group in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022, with a Mean of 11.153 gr/dl min value of 10.5 gr/dl and max value of 11.6 gr/dl, and in the control group Day 14 with a Mean of 10.800 gr/dl min value of 10.3 1% of the total iron in erythrocytes is released daily,

thereby affecting the state of iron in the body. In addition, the occurrence of a peak response from reticulocytes on days 5-7 followed by an increase in hemoglobin levels by 1-2 grams in 4-6 weeks from the start of therapy (Thankachan P., Thomas W., Sumithra M., et al; Nuraeni, 2019).

Characteristics of postpartum mothers, by looking at the most age is the age of 20-35 years as many as 24 respondents (80.0%) otherwise in the age group < 20 years at risk of anemia because in that age group that is reproductive biological development is not optimal. In addition, pregnancy in the age group over 35 years is a high-risk pregnancy. Postpartum mothers with age above 35 years will also be prone to anemia. This causes the Power years of the body begins to decline and easily exposed to various infections during pregnancy and puerperium.

The highest BMI is the ideal BMI of 21 respondents (70.0%) LILA measurement factors that are not related to anemia allow improper measurement methods, factors from the work of pregnant women, and maternal diet that is not good or can be seen from the number of children that are too many so that the needs of postpartum mothers are not met. Poor nutrition in postpartum mothers can cause risks and complications in mothers, among others : anemia, bleeding, mother's weight does not increase normally, and exposed to infectious diseases.

Most education is higher education (high school-college) as many as 25 respondents (83.3%). The education that a person undergoes has an influence on improving the ability to think, in other words, a person with higher education will be able to make more rational decisions, generally open to accepting changes or new things compared to a poorly educated individual. The low level of education of postpartum mothers affects the receipt of information so that knowledge about anemia and factors related to it becomes limited, especially knowledge about the importance of iron.

Work on average worked 15 respondents (50.0%) in terms of the incidence of anemia in puerperal mothers by occupation appeared greater percentage in puerperal mothers who work. Work is an activity so as to obtain income. The type of work determines the amount of income received. Postpartum mothers who work means having income to help their husbands in meeting their daily needs. Postpartum mothers who have income related to the ability of postpartum mothers to obtain knowledge about anemia because of the low level of economic sufficiency in postpartum mothers who do not work resulting in the ability of postpartum women to obtain

information and conduct pregnancy checks to be reduced. However, on the other hand pregnant women who do not work have more free time so that it can be used to attend various counseling despite financial limitations. The knowledge gained by non-working pregnant women has an effect on the low incidence of anemia in pregnant women compared to working mothers.

In this study the highest increase in Hb levels is 11.6 gr / dl with a sample of 1 person with the characteristics of Education and work, Higher Education undertaken by a person has an influence on the improvement of thinking skills, in other words a person with higher education will be able to make more rational decisions, generally open to accept changes or new things compared to individuals with lower education. The low level of education of postpartum mothers affects the receipt of information so that knowledge about anemia and factors related to it becomes limited, especially knowledge about the importance of iron.

Work is an activity so as to obtain income. The type of work determines the amount of income received. Postpartum mothers who work means having income to help their husbands in meeting their daily needs. Postpartum mothers who have income related to the ability of pregnant women to gain knowledge about anemia because of family finances.

Based on the above results can be seen if the date palm juice can help increase Hb in postpartum mothers, with an average increase per week of 0.2-1GR/dL per week, this is because the regularity of the mother when consuming date palm juice becomes an important cause of iron deficiency anemia in subsequent pregnancies. Date palm juice, which is rich in its content, contains components that are able to increase the absorption of iron or play a role in the formation of red blood cells in which hemoglobin is located. In this study, researchers used date palm juice containing glucose, fructose and vitamin C contained in date palm juice can help the absorption of iron.

This is in accordance with the opinion of M. A. Rahayu et al (2016) dates contain excellent nutrients. The sugar content contained in the dates can be directly absorbed by the body. The sugar content in this fruit is different from the sugar content in other foods, because the sugar content that usually must be broken down first is absorbed by the body. Dietitians rate dates as the best food for pregnant women and nursing mothers. That the effect of giving dates on the progress of labor, for pregnant women to consume dates in the right amount and time.

Dates contain high carbohydrates so they can provide enough energy. Some of the sugar content

consists of glucose, fructose, and sucrose,. According to data from the Ministry of Health Hajj explained that iron levels in dates are also quite high, namely 0.90 mg/100g of dates (11% RDA), where iron becomes one of the components in the blood to carry oxygen in the blood, to maintain iron balance in the body, thereby reducing the risk of bleeding in pregnant women (Diyah, 2017).

Vitamin C contained in date palm juice can also increase iron absorption, especially by reducing ferrous iron to ferrous iron. Aside from its role in converting ferric to ferrous before intestinal absorption, vitamin C also regulates iron homeostasis by inhibiting hepcidin expression (e.g., in HepG2 cells), making vitamin C potentially helpful in attenuating iron deficiency. The metabolism of vitamin A contained in Kurma juice has implications for iron homeostasis, so Vitamin A deficiency can cause iron deficiency (Widowati, 2019)

According to the researchers there is an influence between the provision of date juice with an increase in HB puerperal mothers, this is because the content contained in the juice of dates, and consumed for 14 days ternayata effectively increase Hb in puerperal mothers. Sari Kurma is a thick liquid that tastes sweet derived from dates, with the content of glucose, fructose, Vitamin C that can increase hemoglobin levels so as to prevent anemia in pregnant women for respondents to increase hb levels increased rapidly should consume sari kurma with fe tablets or consume foods containing iron such as green spinach, red spinach beet juice.

#### **CONCLUSION**

There is an effectiveness of giving date palm juice with an increase in hemoglobin levels in postpartum mothers in Kesumadadi Village, Bekri District, Central Lampung Regency in 2022.

#### **SUGGESTIONS**

This study is expected to add insight, especially for the community and postpartum mothers who are anemic, recommend postpartum mothers consume date palm juice as much as 10ml/ 2 tablespoons, taken three times a day in order to increase Hb levels in postpartum mothers for 14 days.

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