



## Literature Review: the Effect of Ajwa Dates on Hemoglobin Levels in Perimenopause Women

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### Abstract

Ajwa dates or often called prophet dates are types of dates that grow in Saudi Arabia / Al-Madinah Al-Munawara and have significant value in healing several diseases. The content of active substances contained in date extracts such as vitamins B1, B2, nicotinic acid, vitamin complex A, magnesium, calcium and iron which has a function to help the formation of hemoglobin. Perimenopause is an indefinite period of time that surrounds the final years of a woman's reproductive life, usually between the ages of 30-40 years when estrogen levels slowly decline causing menstrual abnormalities. The decrease in estrogen levels in perimenopausal women causes excessive blood loss so that iron deficiency anemia will occur. Objective : To determine the effect of consumption of ajwa dates (*Phoenix Dactylifera L*) on hemoglobin levels in perimenopausal women. Method : Literature Review with Design Narrative review. Results : Based on the results of research from several literatures that discuss the effects of giving Ajwa Dates (*Phoenix Dactylifera L*) before and after administration, it shows that there are differences in hemoglobin levels. Especially in perimenopausal women who are prone to iron deficiency anemia because Ajwa dates contain high iron, which increases hemoglobin levels. So it is highly recommended for consumption. Conclusion : Ajwa Dates (*Phoenix Dactylifera L*) can increase hemoglobin levels in perimenopausal women.

## Introduction

Perimenopause is a newer term that covers the years before the final menstrual period where the menstrual cycle progresses from regular ovulation and a predictable pattern to irregular cycles and estrogen levels slowly decrease causing menstrual disorders as is the case in perimenopausal women Excessive blood loss is a common cause of iron deficiency anemia.

Anemia is a decrease in the level of hemoglobin, erythrocyte count, and hematocrit so that the number of erythrocytes and/or the level of circulating hemoglobin cannot fulfill its function to provide oxygen for body tissues (Koury, 2014; Lee & Plesa, 2022). Anemia is usually marked by a decrease in hemoglobin levels of less than 13.5 g/dL in adult men and less than 11.5 g/dL in adult women.<sup>3</sup> Hemoglobin is a protein rich in iron (Fe), in hemoglobin it also contains oxygen that has Affinity (binding force) forms oxyhemoglobin in red blood cells, through this

function oxygen is brought down from the lungs to other tissues (Noviani, 2020; Melinda, 2022).

In general, the high prevalence of anemia is caused by several factors, including low intake of iron, vitamins A and C, folic acid, riboflavin and B12 (Azgara, 2023; Retno & Wulandari, 2023). To meet your iron needs every day so you don't experience anemia, you can do this by consuming animal and vegetable food sources. One of the vegetable sources that has many benefits is dates or in Latin the name *Phoenix dactylifera* comes from the city of Medina in the highlands near Naked, Saudi Arabia. This date has the nickname 'Prophet Date' because it was planted by the prophet Muhammad SAW and is mentioned in the prophet's hadith (Istifarin & Nurita, 2023).

*Phoenix dactylifera* L. dates are a fruit that has abundant health benefits, including as an antioxidant, antihyperlipidemic, hepatoprotective agent and preventing cardiovascular disease. Metabolic analysis was carried out on 12 types of dates originating from Saudi Arabia to determine the nutritional composition of each type of date. It can be stated that the highest levels of phenoline are found in Ajwa dates

Dates are a food that is easily digested, absorbed and easily attached to the body. The composition of dates consists of 70% sugar, 20% protein and 3% fat. 6 Ajwa dates contain various vitamins such as B1, B2, nicotinic acid and vitamin complex A, magnesium, calcium and iron. The contents of dates have various functions to help keep the body healthier, metabolize carbohydrates, maintain blood glucose levels, help form hemoglobin, red blood cells and white blood cells and help bone development.

Ajwa dates have been shown to maintain the highest antioxidant activity among other types of dates, suppress lipid peroxidation, prevent cell damage, improve cancer therapy and reduce side effects caused by conventional chemotherapy. It has been shown that the aqueous extract of *Phoenix dactylifera* contains a much higher total phenol content than the alcoholic extract, especially in Ajwa dates. This literature review was created to determine the effect of consuming Ajwa dates on hemoglobin levels in perimenopausal women.

## Methods

The research carried out is Literature Review by design Narrative Review. The data used in this research is secondary data, in the form of post-observation studies and several literature obtained via the internet in the form of research results from theses, national journals, international journals, clinical keys, textbooks and ebooks.

## Result and Discussion

Table 1. Scientific Research Summary

Publication Year	Title	Writer	Method	Results	Conclusion
2021	Giving Dates. Ajwa Against the Increase in Hemoglobin Levels in Third Trimester Pregnant Mothers	Titan Yulianti Iis Three Utami	Almost. Experiment	Results. study levels obtained. Hb. before being given kurma ajwa from 18 people. on. group. intervention. obtained. rate by rate. 10,32gr/dL. and. after. given dates ajwa as big 10.79gr/dL. The results of this study showed that hemoglobin levels in respondents increased by 0.47 gr/dl after being given Ajwa dates.	Of the 18 samples that had been given 100g Ajwa dates for 14 days in the intervention group, it showed that the hemoglobin levels in the respondents had increased, which means that there was an effect of giving Ajwa dates on hemoglobin levels in mothers in the third trimester. Tanjung Mas Makmur Inpatient Health Center, Mesuji Regency in 2021.

2020	Fruit.Ajwa Dates (Phoenix Dactylifera L.) in Increasing Hemoglobin (Hb) Levels in Teenage girl.	Sarina Ali - The Best Of Sarina Ali, Gemini.k now Samrichard	Pre-experimental design	The research results show that rate by rate. The hemoglobin level before the intervention was 10.786 g/dl, and the average hemoglobin level after the intervention was 11.143 g/dl. There was an increase in Hb levels (0.357 g/dl) after the intervention.	Based on the research results, it can be concluded that there was an increase in hemoglobin in 35 teenagers after giving Ajwa dates for 25 days.
2020	The Effect of Giving Date juice. Ajwa (Dactylifera Phoenix) on Hemoglobin Levels in Pregnant Women in PMB Nurhayati Kampar Community Health Center Work Area 2020.	Nur Mardiana, Fitri Apriyanti	As an experiment	After carrying out bivariate analysis, the results showed that there was a difference in the average Hb levels before and after the price of ajwa date juice is 2.95. The statistical test results obtained a p value value $0.000 (\leq 0.05)$ which means there is an effect of giving ajwa date juice to much hemoglobin in pregnant women at PMB Nurhayati region community health center work. Kampar. 2020.	Of the 10 samples before giving Ajwa date juice, the average hemoglobin level was 9.57 g/dl and after giving Ajwa date juice for 8 days the average hemoglobin level increased to become 12.52 g/dl. Found. There is influence giving you dates study of hemoglobin levels in pregnant women in the PMB Nurhayati working area of the Kampar Health Center in 2020.
2018	Effect of Giving Date Juice. Ajwa Pada Mice (Mus musculus) on Hemoglobin and Reticulocyte Levels	Putriana Minarning Tyas, Eva. Diah Wulandari, Vishnu Istanto	True. Experimental	Hemoglobin levels in mice before treatment were 13.96 g/dL, anemic mice were 9.68 g/dL and hemoglobin levels in mice given ajwa date juice with a 20% concentration showed results of 13.82 g/dL, 40% showed results 14.38 g/dL, and 60% showed a result of 15.05 g/dL.	Hemoglobin levels from blood samples in 25 tail mice. Before giving Ajwa date juice, the mice were anemic and after giving Ajwa date juice for 14 days to mice, treatment 1 was for 20% concentration, treatment 2 was for 40% concentration and treatment 3 was for consent-race. 60%. Where exists upgrades much hemoglobin mice. Which means there is influenced giving ajwa date juice against enhancement much hemoglobin on mice.
2020	Anemia Among Women of Reproductive Age in Ecuador: Data From a National Survey	Andrea Sosa Moreno, Sharon Reinoso Gonzalez, Miguel Angel Mendez	Cross-sectional survey	Results from multivariable logistic regression models after adjusting for covariates, found the prevalence of anemia increased with age. Women aged 35 to 49 years have a higher probability of prevalence of moderate-severe anemia, namely 2320 people, compared to women aged 12 to 24 years of 1691 people and	From a population of 6280, it was found that women aged 35 to 49 years had a higher probability of prevalence of moderate-severe anemia than those aged 12-34 years, which means that the prevalence of anemia increases with age.

				25-34 of 2269 people from the overall population of 6280 people.	
2022	Age and incidence of anemia and iron deficiency in pregnant women.	Sri Yunida, Rostika Flora, Rico J. Sitorus, Indah Yuliana, Nurlaili	Descriptive Analytical with cross-sectional design.	The results of statistical tests using the chi square test show a p-value of 0.049 ( $p < 0.05$ ) with a PR of 2.820. The results of this study show that there is a relationship between the age of pregnant women and the incidence of anemia, with the chance of anemia occurring in pregnant women of at-risk age being 2,820 times compared to pregnant women of no-risk age.	The results of data processing using cross tabulation between the age variable and Hb levels showed that of the 55 respondents of risky age, almost all or as many as 46 respondents had anemia, while of the 45 respondents of non-risk age, the majority or as many as 29 people (64.4% ) suffer from anemia. So research shows that there is a relationship between the age of pregnant women and the incidence of anemia, with the chance of developing anemia in pregnant women of at-risk age being 2,820 times compared to pregnant women of no-risk age.

Research conducted by Mahargias & Wahidi (2022). Using the Quasi Experiment method using a Pretest-Posttest research design. It was found that the difference in hemoglobin levels after treatment in the intervention group and the control group can be seen in table 2 with a value of  $p = 0.132$ , where there is a difference in the difference in hemoglobin levels in the intervention group and the control group. So it can be concluded that of the 40 samples that had been examined, before treatment had hemoglobin levels below the normal limit, after giving Ajwa dates for 14 days in the intervention group, a significant effect was found between before and after giving Ajwa dates, namely an increase in levels. hemoglobin.

Table 2. Difference Between Hemoglobin Levels After Treatment in the Intervention Group and the Control Group

Group	Mean	Mean Difference	p-value
Intervention	12,28	0,395	0,132
Control	11,88		

Research conducted by Yulianti & Utami (2021). Using the Quasi Experiment method using a Pretest-Posttest research design. It can be seen in table 3 that there is a difference in hemoglobin levels after treatment in the intervention group which was given 100 gr Ajwa dates/day for 14 days and the control group which was given 1 Fe tablet/day for 14 days with a value of  $p = 0.003$ , where there is a significant difference. Average hemoglobin levels between the intervention group given Ajwa dates and the control group given Fe tablets. So in table 3 it can be concluded that of the 36 samples that were examined, 18 people in the intervention group before treatment had a hemoglobin level of 10.32gr/dL, after giving Ajwa dates they had a hemoglobin level of 10.79gr/dL. Where in the intervention group a significant effect was found between before and after giving Ajwa dates, namely an increase in hemoglobin levels.

Table 3. Effect of Giving Ajwa Dates on Increasing Hb Levels in TM III Pregnant Women

Intesitas Nyeri	N	Mean	SD	SE	P-value
Intervention (Ajwa Dates)	18	10,79	0,57	0,134	0,03

Control (Tablet Fe)	18	10,27	0,42	0,099	
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Table 4. Average Hemoglobin Levels before and after being given Ajwa Dates and Fe Tablets

Pain Intensity	N	Mean	SD	SE	Min-Max	Pain Intensity	N	Mean	SD	SE	Min-Max
Intervention (Ajwa Dates)	18	10,32	0,288	0,679	9,80-10,80	Intervention (Ajwa Dates)	18	10,79	0,57	0,134	9,8-12,1
Control(Tablet Fe)	18	10,00	0,394	0,092	9,3-10,8	Control(Tablet Fe)	18	10,27	0,42	0,099	9,2-11,0

Research conducted by Ali & Alam (2020) used the pre-experimental design method using pretest and posttest without a control group. Where it is found in table 4 that the average hemoglobin level before the intervention was 10.786g/dL, after the intervention the average hemoglobin level was 11.143g/dL. So it can be concluded that from 35 samples given Ajwa dates for 25 days, there was a difference before and after administration with an average difference of 0.357g/dL, which in this study shows that giving Ajwa dates is useful for increasing hemoglobin levels in anemia sufferers.

Table 4. Average hemoglobin levels before and after interventio

Hemoglobin level (Hb) (g/dl)	n	Mean + SD	Mean difference	P-value
Before	35	10.786 + 0.670	0.357	0.006
After	35	11.143 + 0.672		
a Paired T-test.				

Research conducted by Apriyanti (2021) used a quasi-experimental method with nonequivalent pretest and posttest challenges. Where it is found in table 5 that the average hemoglobin level before the intervention was 9.57 g/dL, after the intervention for 8 days the average hemoglobin level was 12.52 g/dL. So it can be concluded that from the 10 samples given Ajwa dates, there was a difference before and after administration with an average difference of 2.95g/dL, which in this study shows that giving Ajwa date fruit juice is useful for increasing hemoglobin levels in pregnant women.

Table 5. Effect of Giving Ajwa Date Juice on Hb Levels in the PMB Nurhayati Working Area of the Kampar Health Center

Variable	Mean	Mean Difference	SD	SE	P-Value
Hb levels before being given ajwa date juice	9,57	2,95	0,76	0,24	0,000
Hb levels after being given ajwa date juice	12,52		1,05	0,33	

Research conducted by Lissa et al. (2018) used true experimental methods with 5 treatment groups, namely negative control group, positive control, treatment 1, treatment 2 and treatment 3. All mice were adapted for 7 days then the negative control was dissected for blood collection. The positive control, Treatments 1, 2 and 3 were induced with NaNO<sub>2</sub> once a day for 18 days then positive controls were dissected for blood collection. Treatment 3 mice were given Ajwa date juice with a concentration of 60%, treatment 2 mice were given Ajwa date juice with a concentration of 40%, treatment mice 1 was given Ajwa date juice with a concentration of 20%

for 14 days. So that the results of the hemoglobin levels from blood samples from 25 mice can be seen in diagram 1, the average calculation for the negative control group was 13.96g/dL, the positive control group 9.68g/dL, the treatment group1 13.82g/dL, the treatment group 2 14.38g/dL. And treatment group 3 15.02g/dL. So in this study, giving Ajwa date juice could have an effect on increasing hemoglobin.

Research conducted by Nadi (2023) used a cross-sectional survey method. It can be seen in table 6 that the prevalence increases with increasing age. From a population of 6280, it was found that women aged 35 to 49 years would have a higher likelihood of moderate to severe anemia prevalence compared to women aged 12-34 years, which means that the prevalence of anemia increases with age. This research was strengthened by regulations from the Minister of Health of the Republic of Indonesia, the nutritional requirements (AKG) for iron or body iron for adolescent women aged 13-18 years require 15 mg of iron every day, while women aged 19-49 years experience an increase in iron requirements every day. namely 18mg of iron per day.

Table 6. Prevalence of increasing hemoglobin levels with increasing age, which is at risk of developing anemia

	Total (n - 7415)	Anemia status		Moderate/severe anemia status	
		<12 g/dL (a - 1135) N (Wt%)	12 g/dl (ref) (n = 6280) N (Wt%)	<11 g/dl. (n - 350) N (Wt %)	>11 g/dl (ref) (n=7065) N (Wt%)
Age (years)					
12-24	1953	262(31)	1691(41)	75 (23)	1878(40)
25-34	2644	375(28)	2269(27)	95 (36)	2549(27)
35-49	2818	498(41)	2320(32)	180(51)	2638 (33)

Research conducted by Thorell et al. (2020) used a descriptive analytical cross sectional design method. It was found in table 7 that the Hb levels showed that almost all of the 55 respondents of at-risk age or as many as 46 respondents had anemia, while of the 45 respondents of no-risk age, the majority or as many as 29 people (64.4%) had anemia. So there is a relationship between the age of pregnant women and the incidence of anemia, with the chance of anemia occurring in pregnant women of at-risk age being 2,820 times compared to pregnant women of no-risk age. This research was strengthened by the regulations of the Indonesian Minister of Health, the daily iron nutritional requirements (AKG) of a pregnant woman will be added to 9 mg of the normal requirement according to her age per day.

Table 7. Prevalence of increasing hemoglobin levels with increasing age in pregnant women who are at risk of developing anemia

Age	As much as HB				Total	P	PR 95% CI Min-Max
	Anemia		No Anemia				
	N	%	N	%			
At risk	46	83.6	9	16.4	55	0.049	2,820
No Risk	29	64.4	16	35.6	45		(1,102-7,216)

## Conclusion

Based on research results from several literature related to "The Effect of Giving Dates.Ajwa.Regarding the Hemoglobin Levels of Perimenopausal Women, it can be concluded that Ajwa dates have the benefit of increasing hemoglobin levels. This is based on 7 research journals which found that Ajwa dates contain high levels of iron to increase hemoglobin levels

in perimenopausal women, where during menstruation perimenopausal women lose a lot of blood, which is a common cause of iron deficiency anemia (ADB) in perimenopausal women. So Ajwa dates, which contain high levels of iron, are very good and are recommended for consumption by teenagers, pregnant women and also perimenopausal women.

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