

FORMULATION OF HONEY AND DATES FOR NUTRITIONAL SUPPORT IN PREGNANT WOMEN 2024 AT GUNUNGTUA PUBLIC HEALTH CENTER MANDAILING NATAL

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ABSTRACT

Background : Anemia in pregnancy remains one of the major contributors to the high Maternal Mortality Rate (AKI) in Indonesia requiring proper management, one of which is through nutritional approach alternatives with dates and honey rich in iron, vitamin C, and other nutrients supporting red blood cell formation. **Objectives :** This study aims to explore and determine the significant effect of providing dates and honey on the increase of hemoglobin levels in pregnant women in the third trimester in the working area of Gunungtua Health Center, Mandailing Natal in 2024. **Methods :** The research method implemented is a quantitative approach with a quasi-experimental design of pretest-posttest with control group. Sampling technique used is total sampling involving a total population of 32 pregnant respondents meeting inclusion criteria, then evenly divided into 16 respondents for the intervention group (given treatment) and 16 respondents for the control group (not given treatment). **Results :** Based on observations before intervention (pre-test), all respondents (100%) in the intervention group and 66.7% of respondents in the control group were identified as having anemia. However, after intervention with dates and honey (post-test), there was a very significant improvement where 100% of pregnant women in the intervention group were free from anemia, while the control group still had 53.3% with anemia. Hypothesis testing through bivariable statistical analysis using Chi-Square test yielded a p-value of 0.002 ($p < 0.05$), which statistically confirms a positive and significant effect of consuming dates and honey on the occurrence of anemia. Also supported by a Relative Risk (RR) value of 3.14 indicating that pregnant women who do not consume dates and honey are 3.14 times more likely to remain anemic than those who regularly consume them. **Conclusions :** In conclusion, the intervention of giving dates and honey proved effective to be applied as a nutritional supplement for pregnant women to naturally raise hemoglobin levels and reduce complications due to iron deficiency anemia in the community.

Keywords: Anemia, Hemoglobin, Pregnant Mothers, Dates, Honey.

INTRODUCTION

Anemia in expectant mothers represents a major worldwide health issue because of its substantial role in elevating Maternal Mortality Ratio, particularly in developing nations like Indonesia. (Nurseha *et al.*, 2024a). This situation frequently leads to significant outcomes not just for the mother, but also for the unborn child, ranging from the danger of hemorrhaging during delivery to complications in the fetus's development. (Shahzad *et al.*, 2024). From an epidemiological perspective, the occurrence of anemia among expectant mothers continues to present concerning statistics, which is significantly linked to a lack of iron in the final trimester of pregnancy. Within the jurisdiction of Gunungtua Health Center located in Mandailing Natal, this issue is still notably observed, indicating that more efficient and feasible management approaches are required to enhance the health conditions of pregnant women. (Zhang *et al.*, 2024)

Traditional methods aimed at tackling anemia typically emphasize the administration of iron supplements. Nevertheless, dietary strategies utilizing natural ingredients are increasingly being recognized as a promising complementary treatment. (Subagio, Arifiati and Suwardiman, 2024). The combination of dates and honey has emerged as a highly promising option due to its intricate nutritional content. Dates are recognized for their high levels of iron and vitamin C, both of which are vital for enhancing iron absorption and promoting hemoglobin production. On the other hand, honey is composed of glucose, fructose, and important minerals that can offer extra energy while aiding in the natural renewal of red blood cells. (Nurseha *et al.*, 2024b). Even though the theoretical benefits of dates and honey are considerable, studies aimed directly at assessing how their combination works for pregnant women in community health settings still require further investigation. This highlights the necessity of performing research to determine the degree to which the consumption of dates and honey can genuinely affect the increase in hemoglobin levels among pregnant women during the third trimester.

METHODS

Utilized in the research presented in this scholarly article, the methodology is quantitative and incorporates a quasi-experimental framework through a pretest-posttest design alongside a control group. This research was (Zhang *et al.*, 2024) carried out in the operational space of Gunungtua Health Center, Mandailing Natal Regency in 2024, including expectant mothers in the last trimester.

Sampling was carried out using total sampling, resulting in a selection of 32 respondents. These individuals were divided equally into two groups: one group consisting of 16 respondents who received supplementation of dates and honey, which is referred to as the intervention group, and another group of 16 respondents who did not receive any treatment, known as the control group. The primary tool for data collection employed in this study is an observation sheet used to document the hemoglobin levels of the respondents prior to and following the intervention.

The procedure for analyzing data initiates with editing, coding, processing, and cleaning phases to confirm the data's validity. Following this, statistical analysis was conducted using the Chi-Square bivariate test to assess the importance of the intervention's impact, and the Relative Risk (RR) was calculated to evaluate the probability of anemia occurrences in the two study groups.

RESULTS

The findings of the study indicate that prior to the intervention, the baseline status of participants exhibited a significant prevalence of anemia, with all individuals in the intervention category (100%) and a large portion of those in the control category (66.7%) recognized as having hemoglobin measurements that fall beneath the acceptable level. This situation underscores the severity of maternal health issues within the jurisdiction of the Gunungtua Community Health Center (Puskesmas), aligning with the national statistics that highlight anemia's substantial role in the Maternal Mortality Rate (AKI) in Indonesia.

Table 1. Characteristics of pregnant women at Gunung Tua Community Health Center

Research Characteristic	Intervention		Control	
Variable	n	%	n	%
Mother's Age				
20-35 Year	12	80%	10	67%
>35 Year	3	20%	5	33%
Paritas				
Primigravida	5	33%	6	40%
Multigravida	10	67%	9	60%
Education				
Basics (SD-SMP)	3	20%	3	20%
Intermediate (SMA)	9	60%	11	73%
Height (PT)	3	20%	1	7%
Employment Status				
Work	7	47%	5	33%
Not working (Housewives)	8	53%	10	67%
Husband's Income				
< UMR	4	27%	6	40%
≥ UMR	11	73%	9	60%

Nevertheless, following the monitoring after the intervention, significant clinical differences were observed between the two groups. The group that was given date and honey supplementation achieved full recovery, with no individuals remaining anemic, while the control group, which did not receive the same treatment, continued to have an anemia prevalence of 53.3%. This occurrence suggests a robust positive relationship between the consumption of particular nutrients and the enhancement of pregnant women's hematological status.

DISCUSSION

The examination of these results in a clinical context is reinforced by the nutritional properties found in dates and honey, which are vital for the process of hematopoiesis. Dates provide a natural source of iron (Fe) and possess vitamin C, which aids in the absorption of iron in the digestive system, whereas honey includes copper (Cu) and a variety of vitamins that promote hemoglobin production. From a statistical standpoint, the bivariate analysis employing the Chi-Square test yielded a p-value of 0.002, which is significantly lower than the alpha level of 0.05, thus empirically validating that the impact of consuming dates and honey on the rise of hemoglobin levels is statistically relevant. Moreover, the Relative Risk (RR) value of 3.14 underscores the importance of this intervention, given that pregnant women who do not include this specific nutrient combination are three times more likely to continue experiencing anemia. Theoretically, these findings

Showing that the alternative nutrition method utilizing functional foods may serve as a beneficial supplementary technique for addressing anemia during the third trimester of pregnancy, in order to lessen the chances of complications during delivery and enhance the general health of the mother.

CONCLUSIONS

Exploration of dietary approaches Support for expectant mothers in their last trimester indicates that offering dates and honey can effectively reduce anemia by boosting hemoglobin levels. Data analysis reveals a noticeable difference in blood profiles between the test and control groups, with the group consuming dates and honey attaining a complete recovery of hemoglobin levels. This success is biologically backed by the rich levels of iron and vitamin C found in both components, which are essential for the production of red blood cells.

For women who are expecting, it is strongly recommended to follow this pattern of nutrition as a way to prevent issues and promote self-healing, which helps keep hemoglobin levels steady and reduces the chances of complications during delivery. Conversely, healthcare organizations should enhance awareness on the use of herbal materials that are rich in micronutrients to foster health independence within families. For the purpose of scientific progress, upcoming researchers are encouraged to carry out additional studies that broaden the scope of variables, such as extending the duration of interventions or tracking serum ferritin levels, and including a more diverse sample size to achieve wider conclusions about how these nutrients function in the reproductive system.

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CONFLICT OF INTEREST AND FUNDING DISCLOSURE

The writer states that there are no financial, personal, institutional, or professional interests that might have affected the planning, execution, examination, or presentation of this study. The writer assures that this paper was created with objectivity and autonomy. In addition, this research did not obtain any particular financial assistance, grants, or backing from government bodies, private companies, or charitable funding sources. All research was carried out utilizing the institutional resources on hand without any outside financial support that might compromise the credibility or results of the research..

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