

Utilization of Moringa Leaf Extract in Processed Products Pudding as an Effort to Prevent Anemia

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Abstract

The proportion of anemia in pregnant women in Indonesia is 48.9% based on the 2018 Central Statistics Agency report. Around 50% of the causes of anemia are iron deficiency. This is a serious health problem and a concern in Indonesian society. Anemia in pregnancy is responsible for 16-40% of maternal deaths. In addition, it also causes morbidity during pregnancy, childbirth, and perinatal not only affecting the mother but also the baby. A cross-sectional study was conducted to find the value of hemoglobin (Hb) levels in pregnant women in Nagrak and Ciangsana Villages. Other parameters include upper arm circumference (MUAC), pre-gestation and current weight, and body mass index (BMI, based on WHO Asia Pacific categories). Descriptive data processing and t-test using Microsoft Excel 2022. The study participants were 24 pregnant women. A total of 12 participants had anemia (50%, 95% CI 9.7 - 11.2). The mean Hb level in the anemic population was 9.14 g/dL (95% CI 8.3 – 10). This study found that 13% of the population had an underweight BMI, and 17% had a low MUAC. As many as 17% of the anemic population had an underweight BMI (p-value 0.000). As many as 25% of the anemic population had a low MUAC (p-value 0.000). The prevalence of anemia in pregnancy in the Nagrak Ciangsana Gunung Putri Experimental Garden/Plantation is still high. Other influencing factors include BMI and MUAC. This reflects the urgent need for routine education and assistance for iron supplementation in this community.

A common health problem in pregnant women is anemia. One of the green vegetables that can increase blood hemoglobin levels is Moringa leaves. The Moringa plant is popularly known as "The Miracle Tree". Moringa is seen as a source of iron (31% daily requirement value per 100 gr) (Winarno, 2018). The study aimed to determine the effect of moringa leaf pudding on increasing hemoglobin levels in pregnant women at Bekasi City Hospital. Pregnant women are expected to consume moringa leaf pudding because it can affect the increase in hemoglobin levels, thereby helping to prevent anemia. Moringa leaves (*moringa oleifera*) have been widely known as plants that are rich in nutrients and have the potential as a natural solution to overcome anemia. These leaves contain iron, protein, vitamins A, and C, and other minerals that can support the formation of hemoglobin and improve the health status of pregnant women, the antioxidant content in moringa leaves also plays a role in increasing endurance and helping the absorption of iron more optimally.

Objective: This community service was carried out to overcome a priority problem at the Bekasi City Hospital, namely anemia in pregnant women.

Method: The method used in this community service uses lectures, discussions, and demonstrations. The target is pregnant women who experience anemia.

Results: The results of this community service, pregnant women understand and comprehend the counseling and complementary therapy "PULOR CEMIA" which can be applied to overcome anemia.

Conclusion: Based on the evaluation of the counseling and provision of Moringa Leaf Pudding during community service, the intervention given went well and effectively with the results that pregnant women were able to answer questions and know how to prevent and treat anemia.

Keywords: Moringa Leaf Extract, Pudding Products, Anemia Prevention

Introduction

Anemia in pregnant women is a decrease in hemoglobin levels below 11 gr/dl, in trimesters I and III or levels <10.5 gr/dl in the second trimester, as a result, it can interfere with the blood's capacity to transport oxygen throughout the body. Anemia is an indicator of malnutrition and poor health. Anemia in pregnant women is closely related to maternal and infant morbidity and mortality, including the risk of birth, prematurity, and low birth weight babies. In pregnant women, anemia increases the frequency of complications in pregnancy and childbirth. The risk of maternal death, low birth weight, prematurity rates, and perinatal mortality rates increase. Antepartum and postpartum bleeding is more common in women who are anemic and is more often fatal because anemic women cannot lose blood (Rukiyah & Yulianti, 2019). In Indonesia, the incidence of anemia in pregnant women is:

48.9% with a proportion according to age of 84.6% in pregnant women aged 15-24 years, 33.7% in pregnant women aged 25-34 years, 33.6% in pregnant women

aged 35-44 years and 24% in pregnant women aged 45-54 years (Riskesdas, 2018). Cases of anemia in pregnant women are mostly caused by low iron intake in the body due to poor diet. Diet is a way or behavior carried out by a person or group of people in choosing and using food ingredients in daily food consumption which includes the type of food, amount of food, and frequency of eating based on socio-cultural factors where the pregnant woman lives (Astriana, 2017).

Anemia can be prevented by consuming a balanced nutritious diet, and sufficient iron intake to meet the body's needs. Available natural ingredients are used as an alternative to overcome anemia and are easy to obtain and cultivate and also contain protein, vitamin C, and iron. One of the non-pharmacological methods or natural ingredients that can be used to increase Hb levels is moringa leaf pudding.

Moringa is considered a source of iron (31% daily requirement value per 100 gr) (Winarno, 2018).

Moringa leaves (*moringa oleifera*) have been widely known as plants that are rich in nutrients and have the potential as a natural solution to overcome anemia.

These leaves contain iron, protein, vitamins A, C, and other minerals that can support the formation of hemoglobin and improve the health status of pregnant women, the antioxidant content in moringa leaves also plays a role in increasing endurance and helping the absorption of iron more optimally.

Processed products from moringa leaves are very diverse, such as processed moringa leaf tea drinks, moringa leaf powder, and also moringa leaf pudding. Moringa leaves contain phytosterol compounds which are compounds that cannot be dissolved in water. Therefore, in the processing of moringa leaf pudding, fresh moringa leaves must be used by utilizing all parts of the leaves. Pudding has a soft texture and has a long shelf life at a certain temperature, namely at a temperature of 17 °C it can last up to 64 hours and at a temperature of 27 °C pudding can last for 59 hours (Pratiwi & Srimati, 2020).

Considering the major impact of anemia problems on pregnant women, we, the 9th Batch of Midwifery Professional Students of the National University at the Community Midwifery level, raised the problem of anemia in pregnant women according to the Health problems at the Bekasi City Hospital. Management of anemia problems in pregnant women while providing education on anemia management, we

also carry out complementary midwifery care, namely providing moringa leaf pudding to increase Hb levels, hereinafter named "Pulor Cemia"

Method

The activity of utilizing moringa leaf extract in pudding preparations is carried out in two ways, the first is by using an educational method or counseling about nutritional intake and education on the various benefits and processed moringa leaves. The second method is by using a video demonstration method on making moringa leaf pudding. This activity was attended by 10 pregnant women at the Bekasi City Hospital.

The stages of implementation include:

1. Pre-activity

- Coordination of implementation strategies including making rundowns, invitations, and division of tasks
- Making educational media in the form of leaflets, videos of making moringa leaf pudding, and questionnaires for guests who attend
- Coordination with the Hospital regarding the location of implementation and technical implementation of activities

2. Activities

- Recording the attendance of the invitees
- Distribution of pre- and post-counseling questionnaires to the invitees
- Implementation of counseling and demonstration of making moringa leaf pudding
- Distribution of moringa leaf pudding
- Q&A of counseling participants

3. Post-activity

- Data recapitulation

- Activity evaluation
4. Extension
- Activity Name: Dun Kelor Pudding Prevents Anemia
 - Place: RSUD dr. Chasbullah Abdul Madjid Kota Bekasi
 - Time: Wednesday, December 04, 2024
 - Target: Pregnant women with anemia
 - Activity Process: Conduct counseling about PULOR CEMIA using powerpoint and leaflets (Causes, impacts, prevention methods, side effects, and how to overcome them).

Results

1. The planning stage begins with a regional orientation

1. Planning
2. Making activity permits
3. Collecting secondary data
4. Group Discussion
5. Preparation of Action Plan

2. Intervention

It begins with providing counseling according to the priority ranking of the problem, which begins with providing education about anemia to pregnant women and distributing "PULOR CEMIA" products and joint consumption activities of the products provided while the speaker explains how to make it and its benefits which can increase HB levels in pregnant women, then continued with a question and answer session and finally a documentation session.

3. Evaluation

After the series of community service activities have been completed, to find out whether the socialization and demonstrations carried out have been effective and good, a question and answer session will be held. In this activity, the community

was very enthusiastic about asking questions related to the material presented, and the activity went smoothly according to plan and ended with a souvenir distribution session as a sign of gratitude. This community service went smoothly, and communicatively, participants actively answered and asked questions.





Conclusion

Based on Community Service held at RSUD dr, Chasbullah Abdul Madjid Bekasi City, Wednesday, December 4, 2024. The event went smoothly. Participants who were pregnant women in their third trimester were also able to follow the material well, and participants were enthusiastic in asking questions and understanding the benefits of the moringa leaf pudding product "PULOR CEMIA" (Moringa Leaf Pudding Prevents Anemia).

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