

## Empowerment of Anemic Pregnant Women through the Provision of Iron Tablets and Ambon Bananas to Increase Hemoglobin Levels in Mondokan, Tuban Regency

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*Anemia in pregnant women is a significant public health issue, especially in rural areas like Mondokan, Tuban Regency, where access to quality healthcare and nutrition may be limited. This community service program aimed to improve hemoglobin levels in anemic pregnant women through the combination of iron tablets (Fe) and Ambon bananas, a locally available food rich in iron, potassium, and vitamin C. The program involved socialization, nutritional education, and the regular provision of iron supplements and Ambon bananas to pregnant women in the third trimester. Hemoglobin levels were measured before and after the intervention to assess the impact. Results showed a significant increase in hemoglobin levels, with 80% of participants showing improvements, averaging an increase of 1.5 g/dL. In addition, knowledge of anemia and nutrition improved markedly among participants, and the community's engagement was high, with over 85% of women attending group support sessions. The use of Ambon bananas also contributed to local economic development, as it promoted the use of locally sourced agricultural products. This program demonstrates the potential for combining local resources and nutritional interventions to address anemia, with positive health outcomes for both pregnant women and the broader community. The findings suggest that this approach can be replicated in other regions facing similar challenges.*

## 1. INTRODUCTION

Anemia in pregnant women is a prevalent health issue found in many regions, including Mondokan, Tuban Regency. According to data from the Ministry of Health of the Republic of Indonesia, anemia in pregnant women is caused by iron (Fe) deficiency, which plays a crucial role in the formation of red blood cells. This condition can lead to various

serious complications for both the mother and the fetus, such as preterm birth, low birth weight (LBW), and increased risks of maternal and perinatal mortality. Anemia during the third trimester of pregnancy is particularly dangerous because it can affect the health of the mother and disrupt fetal development (Anggraeni, 2020).

On the other hand, one of the solutions to address this issue is the provision of iron

supplements (Fe tablets), which have been proven to be effective in increasing hemoglobin levels. However, given the limited socioeconomic conditions of the community, not all pregnant women have adequate access to quality iron supplements. Therefore, it is necessary to develop a more affordable and accessible approach for pregnant women in the region (Stephen etc, 2018).

Ambon bananas, a local commodity in Tuban Regency, contain high nutritional value, including iron, potassium, and vitamin C, which can support the increase of hemoglobin levels in the body. By utilizing this local potential, empowering pregnant women through a combination of iron tablets and Ambon bananas is expected to serve as an effective and affordable intervention to improve hemoglobin levels in anemic pregnant women in Mondokan, Tuban Regency (Hardiani, 2020).

This community service activity aims to provide education and direct intervention to pregnant women with anemia in the area, as well as to raise public awareness about the importance of nutritional fulfillment for the health of both mothers and their babies. Through the provision of iron tablets combined with the regular consumption of Ambon bananas, it is hoped that pregnant women will experience a significant increase in their hemoglobin levels, thereby reducing the risks of anemia and pregnancy-related complications.

Thus, this activity aims not only to address maternal health issues but also to empower the local community to optimally utilize local resources to support the health of mothers and children.

## 2. METHODE

This activity will be carried out with a community empowerment approach and integrated nutritional intervention. The following are the stages and methods that will be implemented in this activity:

### 1) Identification and Socialization

- a. **Activity:** Socialization to the community and pregnant women about the importance of meeting

nutritional needs during pregnancy, particularly related to the prevention and management of anemia in pregnant women.

- b. **Method:** Counseling sessions through group meetings with pregnant women and their families in Mondokan, Tuban Regency. This will involve health professionals such as midwives and nutritionists, who will provide information about anemia in pregnancy, its impacts, and the importance of iron intake and balanced nutrition.
  - c. **Goal:** To increase community awareness about the importance of routine prenatal checkups and balanced nutrition for pregnant women.
- ### 2) Provision of Iron Tablets and Ambon Bananas
- a. **Activity:** Regular administration of iron tablets (Fe tablets) to pregnant women experiencing anemia in the third trimester. Additionally, Ambon bananas will be provided as a supplementary food source rich in iron and other essential nutrients.
  - b. **Method:**
    - a) Distribution of iron tablets according to the dosage recommended by healthcare professionals.
    - b) Counseling on how to properly consume Ambon bananas, and explaining their benefits for pregnant women's health and increasing hemoglobin levels.
    - c) Regular distribution of Ambon bananas (e.g., twice a week) for pregnant women's consumption.
  - c. **Goal:** To increase hemoglobin levels in pregnant women through a combination of nutritional interventions, including the use of iron tablets and Ambon bananas as a source of nutritious food.
- ### 3) Monitoring and Evaluation
- a. **Activity:** Regular monitoring of hemoglobin levels in pregnant women, both before and after the

intervention with iron tablets and Ambon bananas. This will involve blood tests using approved methods, such as testing at local health centers or clinics.

b. **Method:**

- a) Data collection before the intervention (e.g., initial hemoglobin levels and medical history of the pregnant women).
- b) Monitoring every two weeks to observe changes in hemoglobin levels and the health status of the mothers.
- c) Final evaluation to assess the effectiveness of iron tablets and Ambon bananas in increasing hemoglobin levels and reducing anemia-related complications.

- c. **Goal:** To evaluate the success of the program in improving hemoglobin levels in pregnant women and reducing the incidence of anemia in the target community.

4) **Empowerment and Formation of Support Groups**

- a. **Activity:** Formation of a support group for pregnant women in Mondokan to encourage mutual support throughout the program, and the establishment of local health cadres who will educate and motivate other pregnant women.

b. **Method:**

- a) Training of local health cadres on nutrition and anemia in pregnancy.
- b) Regular group meetings to share experiences, provide moral support, and discuss the ongoing consumption of good nutrition during pregnancy.

- c. **Goal:** To increase community engagement in the program, ensure the sustainability of the nutritional initiatives, and strengthen the social support network for pregnant women in Mondokan.

5) **Documentation and Reporting**

- a. **Activity:** Documentation of the activity process, evaluation results, and the impact experienced by pregnant women after participating in the program.

b. **Method:**

- a) Data collection in the form of medical records of pregnant women and hemoglobin test results.

- b) Preparation of a final report that includes data analysis, monitoring outcomes, and recommendations for continuing the program or expanding it to other regions in need.

- c. **Goal:** To document the activity's results, provide policy recommendations, and ensure the possibility of expanding the program to other areas with similar issues.

With this structured and participatory methodology, the community service activity is expected to have a significant positive impact on the health of pregnant women in Mondokan, Tuban Regency, and serve as a model that can be implemented in other regions facing similar challenges.

## 3. RESULTS AND DISCUSSION

### Results

The activity was implemented successfully in Mondokan, Tuban Regency, with the aim of empowering pregnant women suffering from anemia in the third trimester through a combination of iron tablet supplementation and the provision of Ambon bananas. The following key results were observed:

1) **Increased Knowledge of Anemia and Nutrition**

Socialization efforts were well received by the community, with over 90% of the participating pregnant women reporting improved understanding of anemia, its risks, and the importance of proper nutrition during pregnancy. This was evidenced by pre- and post-surveys conducted during group meetings, where knowledge on the causes of anemia and the

role of iron-rich foods increased significantly.

## 2) Improvement in Hemoglobin Levels

Pre-intervention hemoglobin measurements revealed that approximately 70% of the pregnant women were classified as anemic (hemoglobin levels below 11 g/dL). After two months of regular intake of iron tablets and Ambon bananas, 80% of the participants showed a noticeable increase in hemoglobin levels. On average, hemoglobin levels increased by 1.5 g/dL, with some individuals showing an increase of up to 3 g/dL.

The final evaluations revealed that the number of pregnant women with hemoglobin levels below 11 g/dL decreased to 35%. Most of these women showed a reduction in anemia symptoms, such as fatigue and dizziness, and experienced improved overall well-being.

## 3) Community Engagement and Empowerment

The formation of a support group for pregnant women proved to be a valuable component of the program. Over 85% of participants attended the group meetings regularly, and many reported feeling more motivated and confident in managing their health during pregnancy.

The local health cadres, trained as part of the program, played a key role in ensuring the sustainability of the intervention. They actively engaged with pregnant women, provided counseling, and helped encourage regular consumption of the prescribed nutritional supplements.

## 4) Utilization of Local Resources

The use of Ambon bananas as a source of iron and essential nutrients was particularly impactful. Local farmers in Mondokan provided the bananas, which not only contributed to the nutritional intake of pregnant women but also boosted local agriculture by creating demand for this local produce.

This initiative has contributed to greater awareness in the community about the potential of locally available resources to improve health outcomes.

## Discussion

The results of this activity indicate that a combined approach of iron supplementation and the consumption of locally available, nutritious foods such as Ambon bananas can significantly improve the health of pregnant women, particularly those suffering from anemia.

### 1) Effectiveness of Iron Tablets and Ambon Bananas

Iron supplementation is widely recognized as an effective treatment for anemia, and this was confirmed by the improvement in hemoglobin levels among the participants. However, the addition of Ambon bananas, a locally sourced food rich in iron, potassium, and vitamin C, enhanced the overall nutritional intake and supported better absorption of iron, especially given the vitamin C content that aids iron absorption. This dual intervention (iron tablets and bananas) may have had a synergistic effect on improving iron status in the pregnant women (Adriani dan Wirjatmadi, 2016).

### 2) Sustainability and Empowerment of Local Communities

One of the key successes of this activity was the active involvement of local health cadres. By training local community members to provide support, education, and encouragement, the program fostered a sense of ownership within the community. This empowerment is essential for ensuring that the health interventions can be sustained in the long term, even after the formal project period has ended (Nugraha et al., 2020).

Additionally, using local resources like Ambon bananas not only met the nutritional needs of the participants but also created economic opportunities for local farmers, further strengthening the community's resilience and ability to maintain healthy practices in the future (Luthbis, et al., 2020).

### 3) Behavioral and Lifestyle Changes

Beyond the physical improvements in hemoglobin levels, many participants reported feeling more energetic, with fewer symptoms of anemia, such as dizziness and



weakness. This suggests that nutritional interventions like the ones implemented in this program can have a direct impact on the overall well-being and daily functioning of pregnant women.

Furthermore, the support group sessions helped create a platform for exchanging experiences and advice, building a network of support among pregnant women. This social support is crucial for encouraging positive health behaviors and maintaining long-term dietary changes.

#### 4) Challenges and Areas for Improvement

While the intervention was successful, there were challenges such as inconsistent attendance at health check-ups for some women due to transportation or scheduling issues. Going forward, it may be beneficial to integrate mobile health services or conduct home visits for more personalized care.

Additionally, although the local community embraced the use of Ambon bananas, there was some variability in the availability and consistency of supply. Strengthening local supply chains and ensuring a steady availability of these resources will be important for future sustainability.

#### 4. CONCLUSION

The combination of iron tablets and Ambon bananas was effective in improving hemoglobin levels and reducing anemia among pregnant women in Mondokan, Tuban Regency. This intervention not only addressed a critical public health issue but also empowered the local community by utilizing local resources and involving community members in the health process. These results suggest that similar approaches could be replicated in other regions with anemia issues, with a focus on sustainability and local empowerment.

We would like to express our heartfelt gratitude to all parties who have supported and participated in this community service program aimed at addressing anemia in

pregnant women in Mondokan, Tuban Regency.

Our sincere thanks to the **local government of Tuban Regency**, for granting permission and providing full support for the implementation of this program. We also extend our appreciation to the **Health Office** and the **local health center (puskesmas)** for providing medical personnel and facilities for maternal health checks and hemoglobin level monitoring.

We would like to thank the **midwives, nutritionists, and other healthcare professionals** who have delivered education and provided guidance throughout the program. Without your dedication and commitment, the success of this initiative would not have been possible.

Our deepest thanks go to the **pregnant women participants** who actively engaged in every educational session, health check-up, and the consumption of supplements provided. Your participation has been crucial in achieving the program's goals of improving maternal and fetal health.

We also appreciate the contributions of **local farmers** who provided Ambon bananas as a supplementary food source for the pregnant women. This initiative has not only benefited maternal health but also supported the local economy.

We hope that the collaboration established through this program continues to thrive and positively impact public health in Mondokan and its surrounding areas. Thank you once again for all your support, and we trust that this program will serve as a beneficial model for other regions.

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