



Improving Knowledge of Pregnant Women About Iron Deficiency Anemia During Pregnancy in Kinasih Integrated Health Post

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History Article	Abstract
Received: 4 August 2026 Revised: 15 August 2026 Accepted: 25 August 2026	Anemia is a widespread condition globally, particularly in developing countries. Among adults, it frequently affects women of reproductive age—especially pregnant and breastfeeding mothers—due to common iron deficiencies. Overall, anemia affects 45% of women in developing countries and 13% in developed nations. According to the World Health Organization (WHO), anemia during pregnancy is defined as a hemoglobin level of less than 11 g/dL. The pathophysiology of iron-deficiency anemia (IDA) stems from a disruption in the body's iron homeostasis. When iron stores in the bone marrow are depleted, erythropoiesis is impaired, disrupting erythrocyte formation—a clear indicator of IDA. Iron status and erythrocyte activity trigger the production of the hormone erythropoietin (EPO) in the kidneys, which influences bone marrow activity regarding iron reserves. The objective of this community service initiative is to ensure that health cadres (Posyandu members) in RW 18 Sanggrahan—following the educational session—can apply this knowledge and educate pregnant women on preventing iron-deficiency anemia during pregnancy. The program aims to increase the knowledge of both health cadres and pregnant women regarding iron-deficiency anemia during pregnancy.
Keyword	
<i>Health Education, Pregnant Women, Iron Deficiency Anemia</i>	

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INTRODUCTION

The World Health Organization (WHO) defines anemia in pregnancy as a hemoglobin level of less than 11g (Proverawati, 2018). Anemia is a major public health problem worldwide, especially for pregnant women, as many suffer from iron deficiency (Amirudin, 2018). Anemia in pregnant women results in complications with a high risk of miscarriage, hemorrhage, low birth weight (LBW), uterine atony, uterine inertia, and retained placenta. Anemia occurs because of the increased need for iron during pregnancy (Risnawati, 2019).

The maternal mortality rate shows that 70% of women are anemic and 19.7% are non-anemic. The maternal mortality rate reflects the risks faced by anemia during pregnancy and childbirth, which are influenced by the mother's nutritional status, socioeconomic status, poor health before pregnancy, the incidence of various complications during pregnancy and childbirth, and the availability and use of health care facilities, including prenatal and obstetric services (Amalia, 2017). The most common type of anemia during pregnancy is iron deficiency anemia (Putri & Hastina, 2020).

Iron requirements increase significantly during pregnancy compared to non-pregnant conditions, increasing tenfold during pregnancy, from 0.8 mg/day in the first trimester to 7.5 mg/day in the third trimester. Fetal iron requirements increase until the final trimester, necessitating iron supplements (Sulistiyoningsih, 2018). Pregnant women can experience anemia due to increased iron requirements during

pregnancy for fetal growth. Anemia during pregnancy can be prevented if a mother has a good nutritional intake before pregnancy, thus building up iron reserves in her body (Noran & Mohammed, 2015).

According to Regulation of the Minister of Health of the Republic of Indonesia (Permenkes RI) No. 88 of 2014 concerning the standard for administering iron supplements to women of childbearing age and pregnant women, iron supplements containing at least 60 mg of elemental iron (in the form of Ferrous Sulfate, Ferrous Fumarate, or Ferrous Gluconate) are given to pregnant women daily throughout their pregnancy, with a minimum of 90 tablets.

At the Kinasih Integrated Health Post (Posyandu), based on preliminary studies and interviews conducted with pregnant women in early January 2026, it was found that cadres had not routinely provided education about iron deficiency anemia due to limited media. Based on this background, the author wanted to provide counseling to cadres about iron deficiency anemia to increase knowledge among pregnant women at the Kinasih Integrated Health Post.

Based on the above description, the community service team was interested in improving the knowledge of pregnant women through health education about iron deficiency anemia during pregnancy for 15 pregnant respondents and four midwifery students from Kusuma Husada University, Surakarta, at the Kinasih Integrated Health Post.

The aim of this activity is to increase the knowledge of pregnant women about iron deficiency anemia during pregnancy.

METHOD

The method used in this community service program is offline outreach. This is intended to emphasize iron deficiency anemia during pregnancy. Details of this outreach activity are carried out in several stages, as can be seen in the table below:

Table 1. Series of Extension Activities

Stage	Time	Activity Results
Deliberation	Friday, March 6, 2026 4:00 PM - 6:00 PM WIB	Activity theme, time of implementation of counseling and media
Tool Preparation	Monday-Thursday, May 18-21, 2026 4:00 PM - 6:00 PM WIB	Extension materials and media
Implementation of community service counseling	Monday, June 15, 2026 9:00 AM – 12:00 AM WIB	Direct counseling to cadres and pregnant women about iron deficiency anemia during pregnancy
Evaluation	Friday, June 26, 2026	Monitoring and evaluation

The entire series of community service activities were carried out with a time allocation of 50 hours from March-July 2026, after the counseling was carried out, monitoring and evaluation were carried out to collect data. Data obtained from 15 people were obtained through monitoring results using questionnaires and observation sheets about iron deficiency anemia during pregnancy. The validity and reliability test of the basic life support ability questionnaire used the Pearson Product Moment correlation formula with a significance value of 5% using r table 0.361 (Dharma, 2017). The test results obtained a calculated r value between 0.875-0.905. These results indicate that the calculated r value is greater than the r table value of 0.361 so that the questionnaire is declared reliable or suitable for use. The results of the monitoring evaluation were then analyzed using SPSS descriptive analysis.

Target Participants

The target participants for this program are pregnant women directly involved in Posyandu activities at the Kinasih Integrated Health Post (Posyandu). These participants were selected because anemia is a common problem in pregnancy. Improving knowledge about iron deficiency anemia is a crucial factor in achieving a healthy, normal pregnancy. Therefore, equipping members of the Kinasih Integrated Health

Post (Posyandu) with relevant knowledge about iron deficiency anemia is expected to significantly improve the overall quality of their pregnancies.

Training Materials

The training materials were designed based on the identified needs of Posyandu (Integrated Health Post) cadres and aligned with the knowledge needs of pregnant women regarding iron deficiency anemia during pregnancy. The materials covered the definition of iron deficiency anemia, the signs and symptoms of iron deficiency anemia, factors influencing iron deficiency anemia, and prevention and management of iron deficiency anemia. At the end of the community service activity, participants were introduced to a question-and-answer session and a discussion session to further their understanding of iron deficiency anemia during pregnancy.

Implementation Methods

This program uses a participatory and application-oriented approach to maximize learning outcomes. Its implementation consists of several sequential stages. The first stage involves observation and needs interviews, which aim to identify the initial level of knowledge of pregnant women. This stage provides the basis for designing relevant community service materials. The second stage is the implementation of the community service, where participants are provided with material on iron deficiency anemia. This is followed by a discussion and question-and-answer session, allowing participants to share their experiences and challenges in managing their pregnancies. Finally, mentoring and monitoring evaluation sessions are conducted to provide feedback, correction, and guidance to participants. This ensures that participants are able to understand iron deficiency anemia and apply this knowledge correctly and confidently in their daily lives, especially during pregnancy. This participatory approach is designed to create an active learning environment and to ensure that the results of this community service can be directly applied by participants.

Evaluation of the Program

In this activity, material on iron deficiency anemia during pregnancy was provided through direct counseling, and participants were given the opportunity to ask questions. The following is a summary of the community service activities conducted. Following the counseling process, an evaluation of the readiness of pregnant women was conducted, measuring the increase in knowledge about iron deficiency anemia. Evaluations were conducted in person on the day of the community service. Monitoring and evaluation were then conducted online using a Google Form questionnaire.

Activity Flow and Implementation Description

The program activities were organized in a structured sequence, beginning with opening remarks, followed by the delivery of training materials, interactive discussions, practical exercises, and concluding with evaluation and closing sessions. Each stage was designed to ensure a logical flow of learning, from conceptual understanding to practical application. The structured rundown of activities (as illustrated in Figure 3) ensured that the program was implemented efficiently within the allocated time while maintaining participant engagement and achieving the intended learning outcomes.

RESULTS AND DISCUSSION

This community service program aims to increase the knowledge of health workers and pregnant women about iron deficiency anemia during pregnancy at the Kinasih Integrated Health Post (Posyandu). To initiate this community service activity, the community service team first held a cross-sector meeting with the Kinasih Integrated Health Post (Posyandu) coordinator. During this activity, it was agreed that the theme of the activity would be iron deficiency anemia during pregnancy.

The community service program was then implemented in one stage, namely direct offline counseling on iron deficiency anemia during pregnancy, which took place on Thursday, June 15, 2026. Iron deficiency anemia counseling during pregnancy is the most common way to disseminate knowledge about iron deficiency anemia to the general public. This activity can be conducted in public places, schools, families, or workplaces and is relatively short (Scapigliati et al., 2021).

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The results of the community service program showed that the average age of participants was between 25 and 35 years. The one-day coaching and counseling session, attended by 15 pregnant women, yielded a positive response. Pregnant women and community health workers became more knowledgeable about iron deficiency anemia in pregnancy, the signs and symptoms of iron deficiency anemia during pregnancy, factors influencing iron deficiency anemia during pregnancy, and methods for preventing and managing iron deficiency anemia during pregnancy. After participating in the counseling session, the knowledge increased by 90%.

Prior to the counseling session, health workers and pregnant women at the Karanganyar Integrated Health Post (Posyandu) were unable to articulate the concept of iron deficiency anemia in pregnancy, the signs and symptoms of iron deficiency anemia during pregnancy, factors influencing iron deficiency anemia during pregnancy, and methods for preventing and managing iron deficiency anemia during pregnancy. At the conclusion of the counseling session, a question-and-answer session and evaluation were conducted with all 15 participants to determine their level of understanding. Based on the results of the question and answer session with all participants, it was found that 90% were able to correctly state the meaning of iron deficiency anemia in pregnancy, signs and symptoms of iron deficiency anemia during pregnancy, factors that influence iron deficiency anemia during pregnancy, and ways to prevent and treat iron deficiency anemia during pregnancy.

CONCLUSION

This Community Service Program (PKM), which focused on iron deficiency anemia during pregnancy, was successfully implemented and demonstrated a positive impact on participants' knowledge. This program was initiated in response to limited understanding of iron deficiency anemia. This community service used a participatory approach through interactive lectures, discussions, simulations, and hands-on practice. As a result, participants showed a clear improvement in their understanding of the meaning of iron deficiency anemia, the signs and symptoms of iron deficiency anemia, factors affecting iron deficiency anemia, and prevention and management of iron deficiency anemia. This improvement was quantitatively proven by a 90% increase in knowledge in the good category after the community service activity, demonstrating the effectiveness of community service in improving knowledge of iron deficiency anemia. Overall, this program made a significant contribution to improving knowledge of iron deficiency anemia.

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